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GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

DRAFT ENVIRONMENTAL ASSESSMENT REPORT

NOVEMBER 1988

Ministry of Transportation
Ontario

GO TRANSIT

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GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

ENVIRONMENTAL ASSESSMENT REPORT

ONE STAGE SUBMISSION
NOVEMBER 1988

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GOVERNMENT DOCUMENTS

Prepared by McCormick Rankin for:

MINISTRY OF TRANSPORTATION
GO TRANSIT

IN CONSULTATION WITH:

REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH
REGIONAL MUNICIPALITY OF HALTON
CITY OF HAMILTON
CITY OF BURLINGTON

PREFACE

This Report is being submitted by GO Transit in accordance with the requirements of the Environmental Assessment Act.

The GO Train Service Expansion Program - Burlington to Hamilton Study was undertaken as a joint Provincial/Municipal Study under the direction of GO Transit, the Ontario Ministry of Transportation, the Regional Municipality of Hamilton-Wentworth, and the Regional Municipality of Halton. The Study management was undertaken by the Ministry of Transportation.

The general direction of the Study was provided by the Project Team, comprised of:

Mr. B. Ogden - Project Manager, Ministry of Transportation

Ms. F. Chung - Manager, Project Development, GO Transit

Mr. H. Schweinbenz - Commissioner of Transportation, Region of Hamilton-Wentworth

Mr. H. Wong - Manager, Policy, Research and Planning Services, Region of Halton

Mr. F. Norman, Manager of the Ministry of Transportation's Toronto Area Co-ordinating Office and Mr. Schweinbenz acted as Co-Chairmen of the Project Team. The firm of McCormick Rankin, consulting engineers assisted the Project Team in carrying out this study.

The study files and background information are held at GO Transit, 1120 Finch Avenue West, Downsview, Ontario M3J 3J8.

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Section 1

Summary

1. SUMMARY

1.1 Study Area

As shown on Exhibit 1, the area under study for the GO Train Service Expansion Program - Burlington to Hamilton Study extends from the Burlington GO Train Station on Fairview Street westerly to the Hamilton Central Business District, encompassing both the CN and CP railway corridors into downtown Hamilton. The area for study of direct effects is generally within 100 metres of the existing rail corridors, while a broader area in which secondary effects were considered encompassed the entire GO Train ridership catchment zone.

1.2 Purpose of the Undertaking

The objectives of the GO Train Service Expansion Program-Burlington to Hamilton Study are:

- to determine long range recommendations for GO Train service to Hamilton;
- to provide for an integrated local and regional transit system through the development of a single central multimodal Hamilton station;
- to define staging plans that would allow for the implementation of the study recommendations; and
- to protect a route and property for the recommendations.

Acceptance of this Environmental Assessment document and approval of the project by the Minister of the Environment will allow GO Transit to:

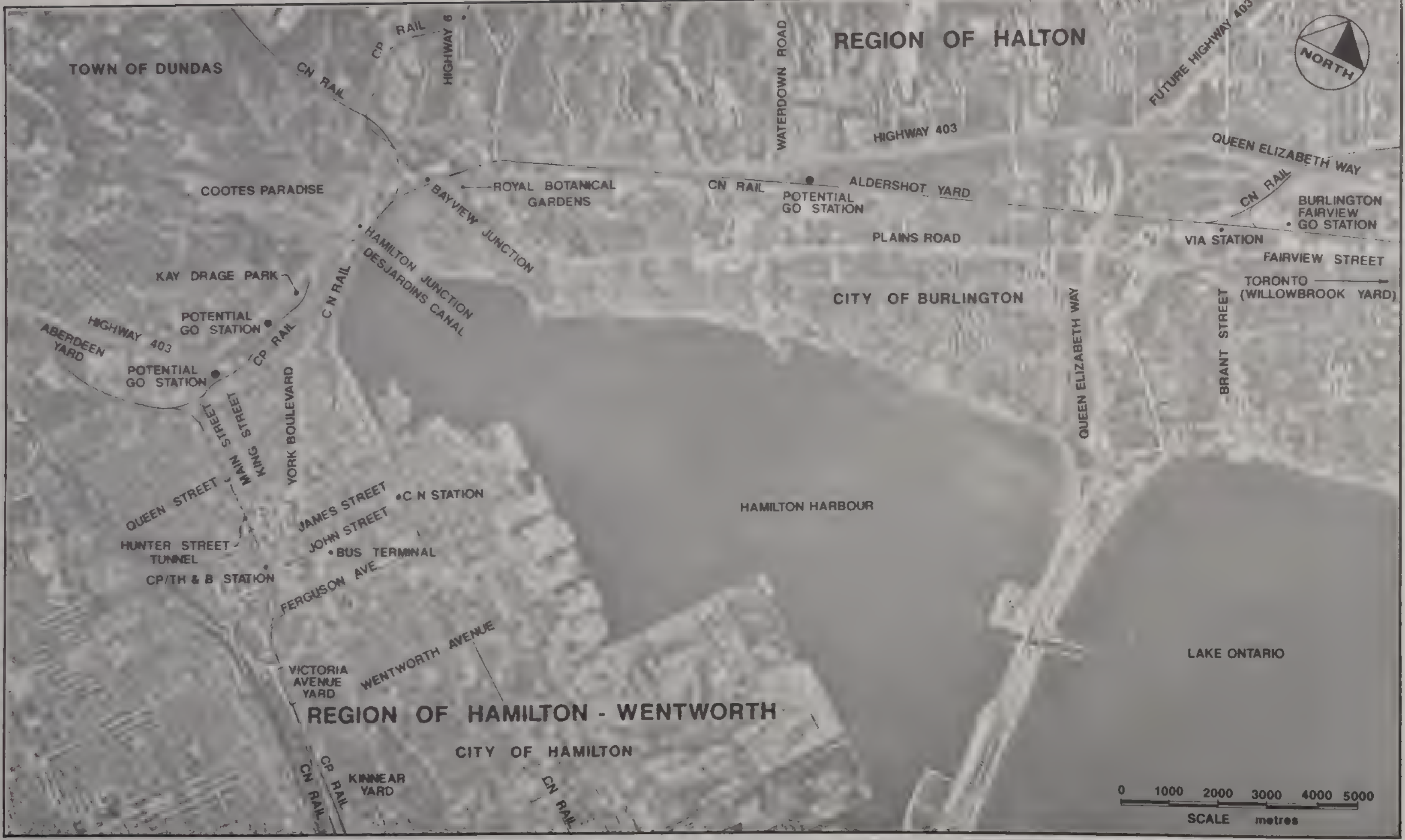
- define the recommended route alignment;
- acquire property necessary for project implementations;
- construct the facility;
- enter into agreements with the railway companies for use of the completed facility; and
- operate and provide for the maintenance of the proposed system.

1.3 Description of the Undertaking

A detailed description of the recommended plan for GO Train expansion to Hamilton comprises Section 6 of this report.

It should be noted that Hamilton is currently served by three Toronto-bound GO Trains leaving the CN Station each weekday morning rush hour, returning to Hamilton in the afternoon. Full GO Train service, with 20 minute peak period frequency and hourly all-day two way service is in place between Oakville and Pickering. Expansion of this train service to Burlington is planned for 1992. Underlying the entire Burlington to Hamilton Study, therefore, is the assumption that significantly improved GO Train service will be in place at the Burlington Fairview GO Station prior to or coincident with any increase in the number of GO Trains serving Hamilton.

Recognizing that the implementation of the recommendations will require approval under the Environmental Assessment Act, and that



EXHIBIT

1

STUDY AREA

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

Ministry of Transportation GO TRANSIT THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH THE REGIONAL MUNICIPALITY OF HALTON

construction will take place in the context of overall transportation requirements and the availability of funding at that time, the final recommendations are as follows:

ROUTE

- Shift the existing GO Train service in Hamilton from the CN Rail Oakville Subdivision to the CP Rail Toronto Connection and Waterford Subdivision, terminating at the CP/TH&B Hunter Street Station.

LEVEL OF SERVICE

- Provide incremental improvements in train service as appropriate, up to the level of service that can be accommodated by the existing Hunter Street Tunnel.
- Maintain supplementary GO Bus service as appropriate.

STATIONS

CP/TH&B Station

- Transfer the functions of the existing Hamilton Bus Terminal to the CP/TH&B Hunter Street Station, which would operate as an inter-modal transit terminal.

Waterdown Road Station

- Provide GO Station facilities in the block bounded by Waterdown Road, Highway 403, CN Rail Aldershot Yard property and CN Rail Oakville Subdivision.

The infrastructure that will allow the implementation of the recommendations includes:

- one new main line track in the CN corridor between Brant Street in Burlington and Hamilton Junction, including signals, switches, and all associated requirements (not required until an increase from the current number of GO Trains);
- upgrading of track and signals in the CP corridor between Hamilton Junction and the CP/TH&B Station;
- one new main line track in the CP corridor between Hamilton Junction and Ray Street (not required until the number of GO and CP trains approaches the capacity of the existing Hunter Street Tunnel);
- reconstruction of crossing rail and road structures as necessary;
- a storage yard for up to 5 GO Trains on the site of the CP Victoria Avenue Yard;
- A GO Station, parking lot, access roads, and interchange modifications at Waterdown Road in Burlington; and
- the reconstruction of the CP/TH&B Station area to provide Bus terminal facilities, taxi and parcel express facilities, and passenger pick-up areas, as well as the rehabilitation of the Station building itself as a passenger terminus.

The Hunter Street Tunnel on the CP line in Hamilton is not proposed to be reconstructed as part of the project.

1.4 Justification of the Need for the Undertaking

The expansion of GO Train Service to Hamilton is an effort to improve service to commuters in the heavily-travelled Hamilton-Toronto corridor and respond to the following transportation issues:

- GO Train service to Hamilton is extremely limited (three weekday rush hour trains to Toronto between 6:30 and 7:20 a.m., returning between 5:40 and 7:10 p.m.);
- GO Trains stop at the CN Station, remote from Hamilton's downtown core, the intercity (GO) Bus Terminal and nearly all local transit routes;
- the scheduled GO Bus service to Toronto is unreliable during peak periods due to longstanding congestion problems on the Queen Elizabeth Way and Gardiner Expressway;
- no significant capacity improvement is currently planned for the Provincial highway network in the Hamilton-Toronto Lakeshore corridor;
- demand for commuter services between Hamilton and the Lakeshore corridor is growing and is projected to double by the year 2011; and
- the economic development strategy of the Region of Hamilton-Wentworth emphasizes the importance of GO Transit links between Hamilton and Toronto, and calls for "...the implementation of full GO rail service to downtown Toronto as soon as possible".

Finally and most importantly, the expansion of GO Train Service is in accordance with provincial objectives of providing a balanced transportation network and an alternative commuting mode to the automobile.

1.5 Alternatives to the Undertaking

Section 5 of the report documents the analysis process used in considering alternatives to the undertaking. A brief summary of the rationale for rejecting all but conventional GO Rail as viable alternatives comprises Table 1. The analysis was reviewed with the public and interested parties in June, 1987. The full documentation of the review process is appended to this report (Appendix I). The selected alternative (improved GO Rail service) was given very strong support by the community and by local municipal governments.

A more detailed study of alternative means of improving GO Rail service to Hamilton followed its confirmation as the most appropriate mode for consideration. The role of the bus mode in complementing the GO Rail service was recognized and incorporated into further study leading to the final recommendations.

TABLE 1: ALTERNATIVES TO THE UNDERTAKING

MODE	DESCRIPTION	SUMMARY OF ANALYSIS
Light Rail Link	Advanced Light Rail Transit (ALRT) or streetcar link between Central Hamilton and Burlington GO Station.	GO-ALRT program terminated by Provincial Government in 1985 due to high cost, community impact, and the non-viability of individual links without the construction of the entire interregional network.
Bus Link	Bus lanes, Transitway, or improved bus service between Hamilton and Burlington.	Service dependent on roadway operating conditions, while dedicated busway has similar drawbacks as GO-ALRT re: costs and impacts, poor service due to highway congestion and/or need to make intermodal transfer to train to complete journey.
Improved Roadways	Additional roadway capacity between Burlington and Hamilton.	Roadway congestion occurs mainly beyond the study area. Improvements may be carried out by others in response to highway demand.
Conventional GO Rail	More frequent GO Trains on existing rail corridors utilizing an intermodal terminal in Hamilton.	Expansion and improvement of an existing system provides good service and may generate economic benefits. Greatest potential for benefits to Hamilton.
Other	Non-conventional modes such as airplane shuttle, hydrofoil, bicycle, etc.	Impractical or uneconomical for mass commuter travel.
Do Nothing	Existing Conditions.	Current problems are not addressed and no improvement is likely.

1.6 Alternative Methods of Carrying Out the Undertaking

1.6.1 Alternatives

Each alternative method of improving GO Train service to Hamilton makes use of existing rail corridors and consists of four basic components: Route; Level of Service; Stations; and Train Storage Facilities. The main alternatives considered during the course of the study are listed below and are illustrated on Exhibit 1 (page 2).

- Routes:
  - Burlington Fairview Station to Hamilton CN Station
  - Burlington Fairview Station to Hamilton CP/TH&B Station
  - Burlington Fairview Station to Hamilton, with route looping in Hamilton via a Ferguson Avenue track linking CN and CP corridors.
- Levels of Service:
  - existing 3 one way peak period trains
  - increased (up to 7) one way peak period trains
  - two way peak period service
  - two way peak period service with some off peak trains
  - "full" service (current Toronto-Oakville GO Train schedule)
  - ultimate service with increased train frequency

- Stations:
  - Waterdown Road (CN Burlington)
  - Kay Drage Park (CP Hamilton)
  - King Street/Main Street/Hwy. 403 area (CP Hamilton)
  - CP/TH&B Station
  - CN Station
- Storage Yards:
  - Willowbrook (GO)
  - Aldershot (CN)
  - Hamilton (CN)
  - Aberdeen (CP)
  - Victoria Avenue/Forest Avenue (CP)
  - Kinnear (CP)

The alternatives were reviewed by local municipalities and the public during the first round of public involvement in June 1987.

1.6.2 Analysis of Alternatives

The analysis process whereby the study recommendations were developed is documented in Sections 5.5 and 5.7.

The two fundamental decisions to be made were the route to be used and the level of service to be provided for expanded GO Train service. Each combination of route and level of service is capable of making use of the appropriate stations and yard facilities.

The Ferguson Avenue loop route alternative was eliminated from consideration following an analysis documented in Section 5.4.1.2, that showed the costs and physical impact on the city would be significantly higher than either of the other options, and little improvement in service would result.

The following summarizes the analysis of alternative routes within Hamilton:

Transportation Service: The CP Station is within walking distance of twice as many residents, three times as many jobs, and ten times as much potential commercial development as the CN terminal. The CP Station is served directly by ten times as many local transit routes as the CN Station.

Economic Benefits: Potential benefits are greater at CP due to the downtown core location of the Station.

Cost: The two routes have similar construction costs.

Social Environment: The CP route has a minor noise and visual impact on the community while the CN route has virtually no impact on established communities.

Natural Environment: The CN route may result in harbour fill at the Hamilton Yard. The CP route may disturb an edge of the Kay Drage Park landfill site.

Level of Service: GO Train service may be improved in stages on either route. Cost of full service outweighs current and projected ridership demand.

The analysis of alternatives was reviewed by local municipalities and the public in November 1987. Based on the above comparison of the impacts and benefits, the preliminary technical recommendations were to shift GO Train service in Hamilton from the CN to the CP route.

1.6.3 Recommendations

Route

For the reasons summarized above and detailed in Section 5.5, a shift in GO Train service from the CN route to the CP route in Hamilton is recommended.

Level of Service

On that route, an increase in the level of GO Train service up to the limit of that able to be accommodated by the existing Hunter Street Tunnel is also recommended.

The recommendations involve an incremental increase in the level of train service up to two way service in peak periods along with some off peak trains, for a total up to approximately ten trains each way per day (see Section 5.6.1). Supplemented by GO Bus service at an integrated intermodal terminal, travellers between Hamilton and Toronto will have frequent all day two way GO service at their disposal.

Stations

The single track tunnel is the main constraint of the CP route, but should demand develop further, it may be reconstructed to allow full GO Train service. However, such a project would be considered in a separate study at the time, as the need for reconstruction is beyond the foreseeable time frame. Appendix F documents the feasibility of reconstructing the Tunnel when necessary.

The CP/TH&B Station is recommended to be redeveloped as Hamilton's Bus Terminal, taking over the functions of the existing Rebecca Street facility, (see Section 5.6.2 for details) and a new station at Waterdown Road is also recommended to serve those Hamilton commuters wishing to drive to the GO Service. The Waterdown Road site features direct access to and from the west on Highway 403 and ample parking (Section 5.6.3). GO commuter parking will not be provided by GO Transit at the CP/TH&B site, although opportunities exist for private or joint venture provision of structured parking there.

The Kay Drage Park and King/Main Station alternatives were rejected after an investigation of access and parking lot potential showed serious inadequacies at each.

Storage Yard

The need for overnight storage of GO Trains will depend on actual schedules and operating conditions, but in order to minimize train movement through the Hunter Street Tunnel, reconfiguration of the Victoria Avenue CP Yard to provide storage for up to five GO Trains is recommended (see Section 5.6.4).

It should be noted that the Final Technical Recommendations received strong support from the public and municipal councils during the third round of review in spring 1988. The review process is documented in Appendix K, while formal municipal resolutions of Council are included in Appendix N.

1.7 Potential Environmental Effects and Mitigating Measures

Through use of existing rail corridors and reconstruction of largely existing facilities, the impact of the expansion of GO Train service to Hamilton is generally kept to a minimum. A summary of the identified environmentally significant areas/issues, along with a summary of the measures recommended to mitigate the effects of the undertaking is provided in Table 2. The details of the impacts and mitigation measures are presented in Section 6, and Table 24 in Section 6 expands on the information presented in Table 2.

1.8 Related Studies and Reports

Studies and reports undertaken during the study and/or directly relevant to the Environmental Assessment submission are appended to this report. A complete bibliography of reference material is included as Appendix O. A copy of each report referred to is held at the head office of GO Transit, 1120 Finch Avenue West, Downsview, Ontario M3J 3J8.

Various reports relevant to the GO Train Expansion Program-Burlington to Hamilton Study, initiated by either GO Transit or the Project Team are listed in Table 3.

There are no studies or reports prepared by other parties concerning the undertaking known to exist. However, a great number of reports containing information relevant to the Study and study area were referred to over the course of the Study. These include over fifty GO-ALRT documents, numerous GO Transit ridership, noise, and technical publications, a number of natural environmental publications, and municipal economic and planning reports. The most pertinent are listed in Appendix O and are available for review in the offices of GO Transit.

1.9 Public Involvement and External Contacts

Section 3 contains the details of the consultation program used throughout the Study to ensure that all interested parties had an opportunity to contribute to and comment on the project. All contacts were channelled through the Project Team, which consisted of senior representatives of the Ministry of Transportation, GO Transit, the Region of Halton, and the Region of Hamilton-Wentworth. Table 4 outlines the extent of public

TABLE 2 SUMMARY OF ENVIRONMENTALLY SIGNIFICANT AREAS , ISSUES AND RECOMMENDED MITIGATING MEASURES

Identified Environmentally Significant Area/Issue	Concerned Agency/Group	Mitigating Measures/Commitments to Future Work
Physiography and Soils - erosion of steep slopes and ravine walls due to construction - effect of soil erosion on R.B.G. and watercourses - erosion due to release of ground water as a result of soil disturbance - disturbance of fill areas - Mineral Resource Protection Area No. 1 for Queenston Shale protection	M.N.R. M.N.R. R.B.G. M.O.E. M.O.E. M.N.R., Halton Region	- in corporation of slope stabilization measures in detailed design - revegetation of exposed slopes where appropriate
Vegetation - Vegetation Units 23,24,25,29,30,33,35,36,50,58,59,60,72,77-82 contain plant species of regional, provincial, and/or national	Halton, Hamilton - Wentworth Regions, M.O.E., Halton E.E.A.C.	- snowfence construction limits and driplines of high quality trees in areas of concern - mark and salvage (if possible) significant plants in construction area - consider alternatives in detailed design to minimize impact
Water Resources - sedimentation of major streams during construction - possible fill in Sunfish Pond, Old Cootes Paradise Outlet, Hamilton Harbour - destruction of shoreline fish habitat in above areas due to fill	Halton R.C.A. Halton, Hamilton R.C.A. Environment Canada Halton, Hamilton R.C.A., Environment Canada	- use standard MTO erosion/sedimentation control measures - in-stream construction limited to June, July, and August - if fill in water, attempt to minimize effect on littoral zone if feasible - use clean, non-erodible fill - adhere to Halton R.C.A. policies re: runoff at Waterdown Road Station
Wildlife - preservation of wildlife habitat along streams and ravines and in the Sassafras Woods - preservation of shoreline habitat along Sunfish Pond, Hamilton Harbour, Desjardins Canal	Halton Region Hamilton-Wentworth Region	- revegetate areas affected by construction where appropriate - conduct preconstruction survey for Eastern Spiny Softshell turtle basking/nesting sites along shoreline, and incorporate findings in detail design to protect habitat - no impact on Sassafras Woods
Environmentally Sensitive Areas - Halton Region E.S.A. 4 (Sassafras Woods) - Halton Region E.S.A. 3 (Grindstone Creek Valley) - Hamilton - Wentworth Region E.S.A. 16 (R.B.G. - Cootes Paradise)	Halton Region Halton Region Hamilton - Wentworth	- no effect on Halton E.S.A. 4 - mitigating measures for Halton E.S.A. 3 and Hamilton-Wentworth E.S.A. 16 as described for Soils, Vegetation, Water Resources, Fisheries, Wildlife, and Heritage Resources
Communities - noise due to rail activities - additional traffic due to Stations - safety adjacent to rail corridor - parking in neighbourhoods near CP/TH&B Station - vibration due to train passage - air pollution - disruption to community during construction, especially re: Hunter Street Tunnel - potential for drop in property values	Dover, Hunter Street/Canada Street Communities Dover, Durand Communities Dover Community Durand, McNab Street South Communities Hunter Street residents Residents near either end of Hunder Street Tunnel Durand neighbourhood abutting landowners	- no significant effects in terms of noise, vibration, air pollution, safety, traffic, construction disruption, and property values - Waterdown Road Station recommended to parking demand - comply with municipal bylaws concerning construction activities and related noise - reconstruction of Hunter Street Tunnel not recommended
Heritage Resources - original railway structures (from 1890's) may be removed/reconstructed - VIA Burlington, CP/TH&B, and Hamilton Stations have architectural/historic merit and are sensitive to change - remnants of mass graves and Burlington Heights ramparts may be uncovered with railway expansion - scenic interest in R.B.G./Harbour area sensitive to railway expansion	M.C.C. Hamilton LACAC, Burlington LACAC, M.C.C. M.C.C., R.B.G. R.B.	- retain and rehabilitate CP/TH&B Station; no effect on others - address heritage concerns re: structures at detailed design stage - assess archeological site location relative to track work - do pre-construction test digs where appropriate and notify M.C.C. if archaeological material found - revegetate new fill slopes where appropriate
Land Use - major redevelopment in area of CN Station not in keeping with local character - land use changes due to CP/TH&B Station - related activity may impact residential areas nearby	Hamilton Official Plan, Local residents Durand Neighbourhood Association	- no significant effect on CP/TH&B area - no impact on CN area
Economic Development Strategies - improvements in Hamilton-Toronto commuter links recommended as part of Hamilton-Wentworth regional economic development strategy	Hamilton-Wentworth Region	- implement final technical recommendations
Railways - protect integrity of existing and proposed train service schedules - minimize conflicts between GO and other trains - protect for ultimate track requirements in all infrastructure	CN Rail, CP Rail, VIA Rail GO Transit CN Rail, CP Rail, GO Transit CN Rail, CP Rail	- schedules, design criteria, construction, operation and maintenance of tracks subject to agreement between all parties at detailed design stage
Roadways - protect for ultimate interchange requirements at Waterdown Road/Highway 403 - provide good level of service at Waterdown Road/Highway 403 interchange - allow construction of the Perimeter Industrial Road in CN corridor - minimize disruption during construction, especially at crossings - ensure local street system near stations is capable of handling generated traffic	M.T.O. M.T.O. Hamilton-Wentworth Region Cities of Hamilton and Burlington; Regions of Halton and Hamilton-Wentworth City of Hamilton, Hamilton-Wentworth Region	- Waterdown Road/Highway 403 interchange design acceptable to M.T.O. - no impact on Perimeter Road - disruption to traffic during construction to be minimized through consultation at detailed design stage - provide Waterdown Road Station for auto users
Transit Systems - inte grate GO Bus and GO Train facilities - provide adequate Hamilton Bus Terminal facilities for all users, including forecast growth - provide adequate parking at appropriate locations for transit users	GO Transit Bus operators GO Transit, City of Hamilton City of Burlington, transit users	- implement final technical recommendations
Utilities - protect all utility crossings from disruption during construction - move or reinstate all utilities in locations acceptable to owners if necessary due to track expansion	Utility owners	- consult with utility owners during detailed design

TABLE 3: STUDIES CARRIED OUT UNDER THE CONTROL OF THE PROPONENT

	REPORT	AUTHOR	DATE
1.	GO Transit Lakeshore Service Expansion Plan Issue 1A Interim Service Improvements West of Oakville.	Canadian National Railway	March 4, 1986
2.	GO Transit Lakeshore Service Expansion Study Issue 5 Hamilton Project; Indication of Mainline Requirements.	Canadian National Railways	July 31, 1986
3.	Twenty Train Scenario Report .	Canadian National Railways	November. 1988
4.	Study to identify the Rail Plant Improvements in order to provide GO Rail Commuter Service Extensions to Oshawa and Hamilton utilizing Segments of CP Right-to-Way.	CP Rail	December, 1986
5.	Report on Intermediate Level of GO Transit Rail Commuter Service between Hamilton Junction and Hunter Street Station.	CP Rail - East	April, 1988
6.	Study Organization, Study Process and Study Involvement.	McCormick Rankin	May, 1987
7.	Overview Report	McCormick Rankin	June, 1987
8.	Report on First Round of Public Involvement	McCormick Rankin	June, 1987
9.	Report on Second Round of Public Involvement	McCormick Rankin	November, 1987
10.	Report on Third Round of Public Involvement	McCormick Rankin	June, 1988
11.	Economic Development Assessment	Cresap/Barnard	November, 1987
12.	Plant Requirements	Morrison Hershfield	October 23, '87
13.	Hunter Street Tunnel	Morrison Hershfield	October 30, '87
14.	Natural Environment Assessment	Ecoplans	September 1988

involvement and external contacts during the study.

Apart from regular meetings and ongoing correspondence over the twenty-month course of the Study, the involvement of the general public and most review agencies focussed on three formal rounds of review. These periods included presentations to Committees of Council of each local municipality, review meetings with technical agencies and municipal staff, and an extensive publicity effort culminating in the hosting of Public Information Centres in Burlington and Hamilton.

The three review periods were:

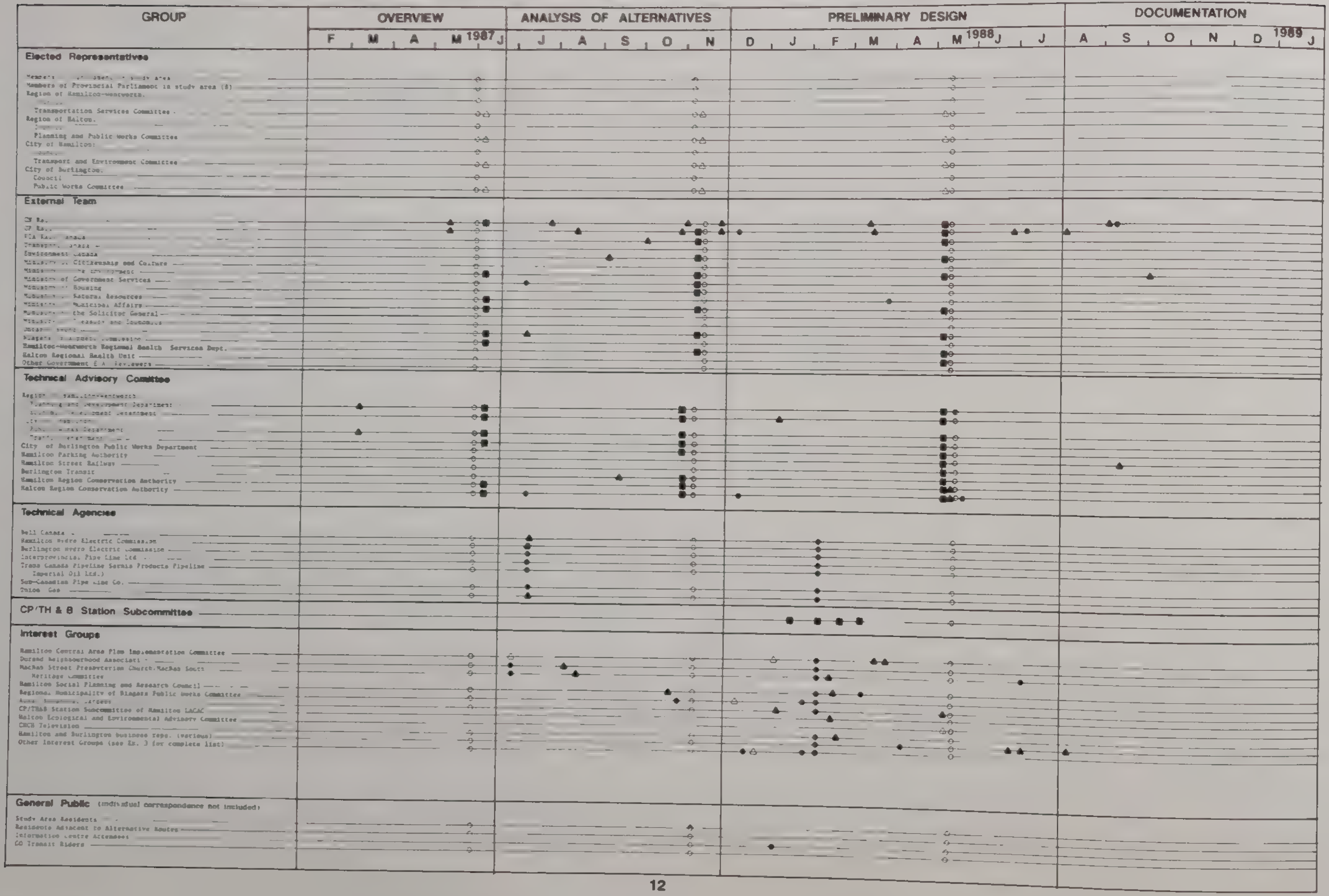
June, 1987	- Study overview and identification of alternatives
November, 1987	- Analysis of alternatives and preliminary technical recommendations
May-June, 1988	- Preliminary design and final technical recommendations

More than 1,000 visitors were registered at a total of 8 Public Information Centres, with 350 comment sheets submitted. The vast majority of the comment sheets indicated support for expanded GO Train service during the first round of review, and for the study recommendations during the latter rounds. Appendices I, J, and K document the public involvement process in full, while individual comment sheets, due to space limitations in this report, are held in the offices of GO Transit.

The Project Team was accessible to the public at all times throughout the Study, and initiated numerous meetings with interested groups, as documented in the following Table 4.

TABLE 4 : SUMMARY OF INVOLVEMENT AND EXTERNAL CONTACTS

• Correspondence ○ Invitation to Public Information Centres ▲ Individual Meeting ■ Committee Meeting △ Presentation



Section 2

Introduction

2. INTRODUCTION

2.1 The Environmental Assessment Report - One Stage Submission

Under GO Transit's Class Environmental Assessment Document, the Burlington to Hamilton project falls into the Group A category, for which an Environmental Assessment is mandatory. This classification reflects the fact that the project is of significant size, involves rail line construction activities (category A1), extended service on existing track (A2), new commuter rail stations (A3), new storage yards for commuter rail lines (A4), new commuter bus terminal facilities (A5), and new storage facilities for commuter bus service (A6).

The Environmental Assessment - One Stage Submission represents a one-time only Environmental Assessment carried out for a Group "A" project. It includes the following:

- a discussion of the purpose of the project;
- the environmental assessment process followed;
- the current environmental conditions in the study area;
- the alternatives considered;
- a description of the environmental effects associated with the project and all reasonable alternatives; and,
- an outline of the commitment for further work to be undertaken relative to identified "environmentally significant areas/issues".

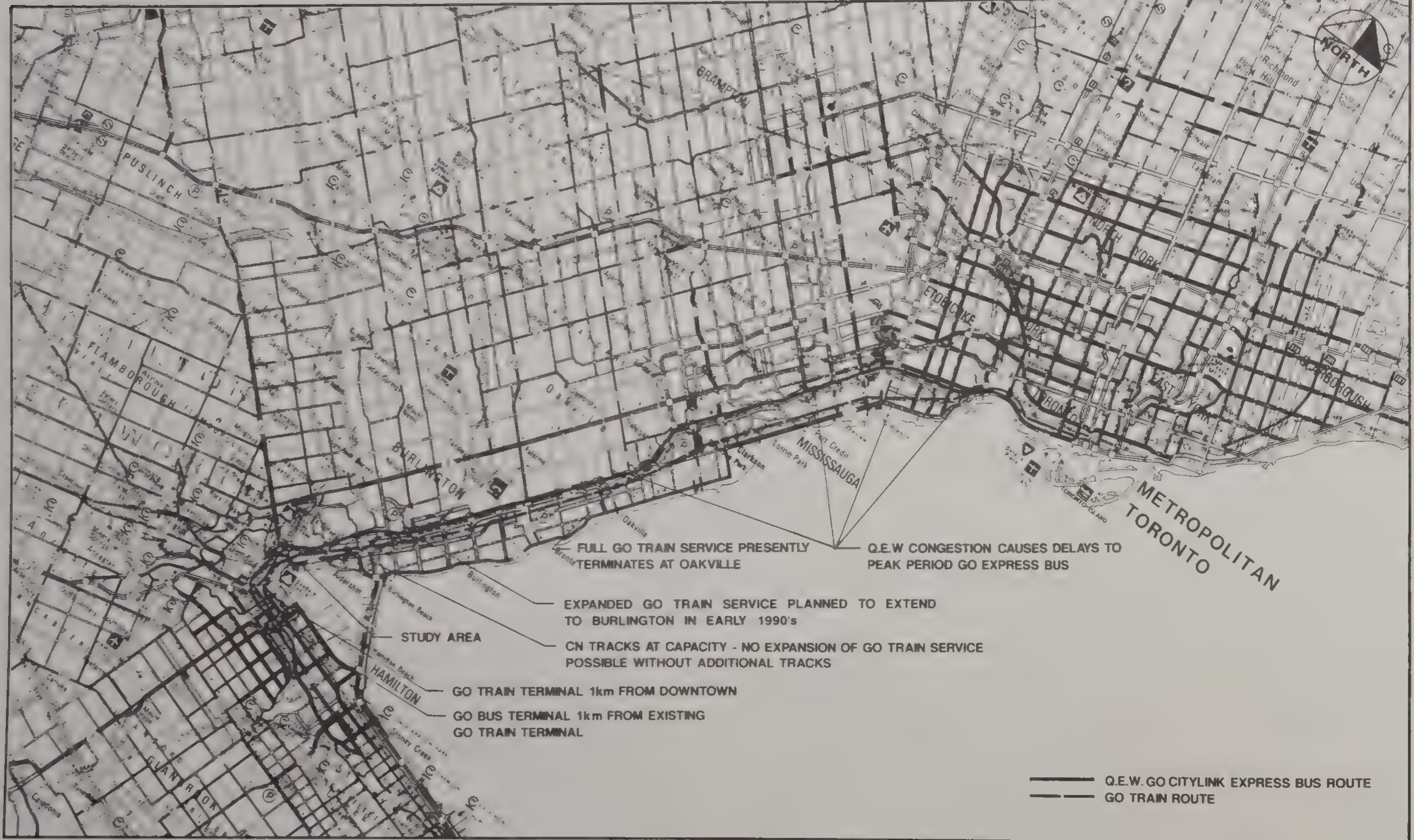
Acceptance of this Environmental Assessment document and approval of the project by the Minister of Environment will allow GO Transit to:

- define the recommended route alignment;
- acquire property necessary for project implementation;
- construct the facility;
- enter into agreements with the railway companies for use of the completed facility; and
- operate and provide for the maintenance of the proposed system.

2.2 Transportation Problems

Although the study area is limited to the Burlington-Hamilton rail corridor, it must be recognized that Hamilton-based users of the GO Transit system are also affected by transportation problems beyond the study area. In fact, the vast majority of the GO riders from the study area travel between the study area and the central Toronto bus and train terminals.

Regular severe peak period traffic congestion on the Q.E.W. east of the study area makes GO Bus schedules unreliable at the times that the greatest demand is present. No significant level of service improvements in the Q.E.W. corridor are currently envisaged by the Ministry of Transportation. Frequent all-day GO Train service is presently available only between Oakville and Toronto with a nominal number of trains (3 each way daily) extending past Oakville to serve Burlington and Hamilton. This



FULL GO TRAIN SERVICE PRESENTLY TERMINATES AT OAKVILLE

Q.E.W CONGESTION CAUSES DELAYS TO PEAK PERIOD GO EXPRESS BUS

EXPANDED GO TRAIN SERVICE PLANNED TO EXTEND TO BURLINGTON IN EARLY 1990's

STUDY AREA

CN TRACKS AT CAPACITY - NO EXPANSION OF GO TRAIN SERVICE POSSIBLE WITHOUT ADDITIONAL TRACKS

GO TRAIN TERMINAL 1km FROM DOWNTOWN

GO BUS TERMINAL 1km FROM EXISTING GO TRAIN TERMINAL

EXHIBIT

2

EXISTING TRANSPORTATION PROBLEMS

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

Ministry of Transportation
GO TRANSIT
THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH
THE REGIONAL MUNICIPALITY OF HALTON

service is planned to be expanded between Oakville and the Burlington Fairview GO Station by 1992.

Further expansion of GO Train service on existing CN tracks west of the Burlington GO Station is precluded as the tracks currently operate at or near capacity. The commuter and interregional transit services in Hamilton are also hampered significantly by the separation between the existing GO Train facility at the CN Station and the intercity Bus Terminal used by GO Buses. The train station currently in use (CN) is remote from the downtown core and served in a very limited way by local transit. As a reflection of the limited GO Train service, approximately 85 per cent of the Hamilton-Toronto GO riders use the GO Bus Service instead.

Thus the ability of GO Train service to attract existing highway users and contribute to a balanced transportation network in the Hamilton-Toronto corridor suffers from physical and operational constraints. These are summarized in Exhibit 2.

As long term economic, land use, and social forecasts indicate a growing demand for Toronto-centred commuting, a strong transportation network will continue to be essential to the areas served by GO Transit.

In addition to the traditional Toronto-centred commuter pattern, the Region of Hamilton-Wentworth is actively seeking a higher profile in the area in terms of attractiveness to employers and visitors. Improved transportation links between Hamilton and Toronto form a fundamental part of this Regional development thrust. The 1986 report "An Economic Strategy for Hamilton-Wentworth" prepared by the Regional Planning and Development Department states that:

"...a GO Transit link is vital to the Region's Economic Growth" (p.105) and recommends "...the implementation of full GO rail service to downtown Hamilton as soon as possible" (p.122).

2.3 Purpose of the Project

The objectives of the GO Train Service Expansion Program-Burlington to Hamilton Study are:

- to determine long range recommendations for GO Train service to Hamilton;
- to provide for an integrated local and regional transit system through the development of a single central multimodal Hamilton Station;
- to define staging plans that would allow for the implementation of the recommendations; and
- to protect a route and property for the recommendations.

2.4 Background

Over the past two decades, an extensive inter-regional transit network has been developed in the Greater Toronto area, stretching from Hamilton to Oshawa (see Exhibit 7 in Section 4). The most heavily used link of the system is the GO Train Lakeshore service. As traffic congestion and transit demand has grown, the expansion of the service has been studied extensively. The study of the Burlington to Hamilton section is documented in this Environmental Assessment report.

A brief summary of events follows:

- May 23, 1967: GO Train service initiated between Hamilton and Toronto, with two eastbound morning trains returning in the afternoon.
- Sept. 4, 1970: GO Bus service begins between Hamilton and Toronto.
- Apr. 26, 1981: Express GO Bus service on Q.E.W. introduced.
- October 1982: Provincial Inter-Regional Rapid Transit Strategy initiated by Minister of Transportation and Communications, including as a first priority the extension of GO Transit service from Oakville to Hamilton using Advanced Light Rail Transit (ALRT).
- April 1983 - May 1985: GO-ALRT Hamilton Project undertaken, resulting in a recommendation for a new LRT alignment paralleling the CN tracks in Burlington and located in the York Boulevard median with a terminus at Wilson Street in Hamilton.
- May 1985: GO-ALRT program cancelled by Minister of Transportation and Communications in favour of use of existing technology.
- August 1985: GO Transit initiated studies by CP Rail and CN Rail to determine requirements for extension of various levels of train service to Hamilton as part of the GO Train Service Expansion Program.
- July 1986: CN Rail report completed.
- October 1986: GO Train service expanded to three trains each way daily between Hamilton and Toronto.
- December 1986: CP Rail report completed.
- February 1987: Current study initiated by the Ministry of Transportation and Communications on behalf of GO Transit.
- February - June 1987: Overview stage carried out, consisting of information gathering, and development of alternatives, followed by a public review.
- July - December 1987: Analysis stage carried out. Meetings, detailed technical studies, analysis of alternatives, preliminary recommendations, and public review are included in stage.
- January - June 1988: Refinement and development of final technical recommendations undertaken, leading to preparation of preliminary design of recommended infrastructure. Public review carried out.

- July 1988 - Present:	Preparation and pre-submission review of an Environmental Assessment Report for the Burlington to Hamilton project. The stage is completed with the submission of this report to the Minister of the Environment for approval.

Section 3

Environmental Assessment Process

3. ENVIRONMENTAL ASSESSMENT PROCESS

3.1 Study Organization

Exhibit 3 outlines the organization of the Burlington to Hamilton study. The Study was part of GO Transit's Service Expansion Program, and was undertaken as a joint Provincial/Municipal Study under the direction of GO Transit, the Ontario Ministry of Transportation, the Regional Municipality of Hamilton-Wentworth, and the Regional Municipality of Halton.

GO Transit is the proponent of the project, and was assisted in carrying out the study by the Toronto Area Coordinating Office of the Ministry of Transportation, which was responsible for the day to day project management of the study. GO Transit is responsible through its Board of Directors to the Minister of Transportation.

The general direction of the Study was provided by a Project Team, comprised of:

Mr. B. Ogden - Project Manager, Ministry of Transportation

Mr. F. Chung - Manager, Project Development, GO Transit

Mr. H. Schweinbenz - Commissioner of Transportation, Region of Hamilton-Wentworth

Mr. H. Wong - Manager, Policy, Research and Planning Services, Region of Halton

Mr. F. Norman, Manager of the Ministry of Transportation's Toronto Area Coordinating Office and Mr. Schweinbenz acted as Co-Chairmen of the Project Team.

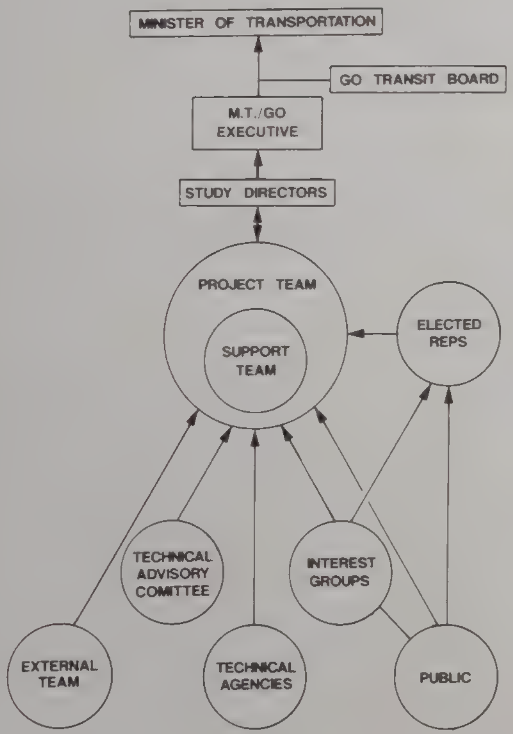
The Project Team was responsible to Ministry and GO Transit executives, and ultimately to the GO Transit Board of Directors and the Minister of Transportation. The Project Team served as the focal point for external consultation and internal study direction.

The consulting engineering firm of McCormick Rankin assisted the Project Team in carrying out the Study. For this study, the Consultant retained a number of subconsultants to provide specialized expertise in certain areas. The Consultant was responsible for their day-to-day direction.

3.2 Study Design

As set out in the Terms of Reference for the Study (see Appendix A), the study was composed of an Overview and a Planning component. The latter component consisted of a Route Planning phase, a Preliminary Design phase, and a Report Preparation phase. The study area (see Exhibit 1) was defined as the area near the existing rail corridors between Burlington and Hamilton. The overview began in February 1987 and was designed to:

- determine whether a detailed Planning Study was needed;
- identify key issues to be addressed in the Planning Component;
- identify the range of alternatives to be addressed; and
- provide a preliminary commentary on the alternatives so that the Planning Component could focus on the most appropriate options.



PROPONENT

Minister of Transportation

Honourable E. Fulton

GO Transit Board

[redacted] hairman plus Regional Chairmen
[redacted]entworth, Halton, Peel, Metro Toronto,
[redacted]

M.T./GO Executive

[redacted]

[redacted]

Study Directors

Frank Norman, Manager, Toronto Area Coordinating
[redacted] of Transportation
[redacted] Commissioner of Transportation,
[redacted]

Project Team

[redacted] Project Manager, Toronto Area
[redacted]ce, Ministry of Transportation
[redacted] Manager, Project Development, GO
[redacted]
[redacted], Manager, Policy, Research and Planning Services, Region of Halton
Dale Turvey, Director of Transportation, Region of Hamilton-Wentworth (replaced by Heinz Schweinbenz)

Consultants

John Sutherns, Project Manager, McCormick Rankin, Consulting Engineers

Subconsultants (coordinated by McCormick Rankin):

Cresap Barnard Ltd. (changed to Cresap/Canada Consulting) (economic effects)
Morrison Hershfield Ltd. (rail operations and plant)
Ecoplans Ltd. (natural environmental assessment)
J. Strasman Architects Ltd. (station development)
Tranplan Associates Ltd. (ridership demand)

Internal Team

Ministry of Transportation:
  Transportation Demand Research Office
  Central Region Planning and Design Section
  Environmental Office

REVIEW AGENTS

Elected Representatives

Members of Parliament in study area (5)
Members of Provincial Parliament in study area (8)
Region of Hamilton-Wentworth:
  Council
  Transportation Services Committee
Region of Halton:
  Council
  Planning and Public Works Committee
City of Hamilton:
  Council
  Transport and Environment Committee
City of Burlington:
  Council
  Public Works Committee

External Team

CN Rail
CP Rail
VIA Rail Canada
Transport Canada
Environment Canada
Ministry of Citizenship and Culture
Ministry of the Environment
Ministry of Government Services
Ministry of Housing
Ministry of Natural Resources
Ministry of Municipal Affairs
Ministry of the Solicitor General
Ministry of Treasury and Economics
Ontario Hydro
Niagara Escarpment Commission
Hamilton-Wentworth Regional Health Services Dept.
Halton Regional Health Unit
Other Government E.A. Reviewers

Technical Advisory Comittee

Region of Hamilton-Wentworth:
  Planning and Development Department
  Economic Development Department
City of Hamilton:
  Public Works Department
  Traffic Department
City of Burlington Public Works Department
Hamilton Parking Authority
Hamilton Street Railway
Burlington Transit
Hamilton Region Conservation Authority
Halton Region Conservation Authority

Technical Agencies

Bell Canada
Hamilton Hydro Electric Commission
Burlington Hydro Electric Commission
Interprovincial Pipe Line Ltd.
Trans Canada Pipeline Sarnia Products Pipeline (Imperial Oil Ltd.)
Sun-Canadian Pipe Line Co.
Union Gas

INTEREST GROUPS

Royal Botanical Gardens
Dundurn Castle
Hamilton Local Architectural Conservation Advisory Committee
Burlington Local Architectural Conservation Advisory Committee
Architectural Conservancy of Ontario, Hamilton-Niagara Branch
Hamilton Historical Board
Burlington Historical Society
Downtown Hamilton Business Improvement Area
Downtown Burlington Business Improvement Area
Jamesville Business Improvement Area
Barton Street Merchants Association
Hess Village Mall Authority
Jackson Square Mall Association
Westdale Merchants Association
First Place Civic Square
Metropolitan Hamilton Real Estate Board
Burlington Chamber of Commerce
Hamilton District Chamber of Commerce
Stoney Creek Chamber of Commerce
Hamilton Construction Association
Hamilton CAPIC
North End Residents Association
Bay Area Residents
Durand Neighbourhood Association
Skyway Neighbourhood Association
Aldershot Ratepayers Association
ADHOC Committee of Burlington Citizens
North Central Burlington Community Association
[illegible] Burlington Citizens Forum
Ward 4 Woodlands Ratepayers Group
Burlington Lakeside Association
Bridgeview Community Association
Tyandaga Community Association
Burlington West Citizens Group
Coalition on Sensible Transit
Canada Coach Lines
Social Planning and Research Council of Hamilton
Social Planning Council of Halton - Burlington Board
Hamilton Board of Education
Halton Board of Education
Hamilton-Wentworth R.C.S.S. Board
Halton R.C.S.S. Board of Education
McMaster University
Mohawk College
Hamilton City Cemetery Board
Beth Jacob Synagogue
Hamilton Automobile Club
Federation of Ontario Naturalists
Halton and North Peel Field Naturalists
South Peel Naturalists Club
Hamilton Naturalists Club
Hamilton Field Naturalists
Ontario Field Ornithologists
Hamilton District Soccer Association
Hamilton Harbour Stakeholders
Old King Street East Business Improvement Area
Hamilton and District Labour Council
Stelco Inc.
Stoney Creek Citizens Association
TALLS
United Disabled Consumers
Wesley Urban Ministries, Inc.
West Avenue Homes and School Association
West Hamilton Community Council
B.O.O.S.T.
Community Information Service
Locke Street Businessmen's Association
Community Studies Program, Mohawk College
North End Information Service
McQuesten Community and Legal Services
Hamilton and District Council of Women
CHCH Television
MacNab Street Presbyterian Church
MacNab South Heritage Committee

EXHIBIT
3

STUDY ORGANIZATION

GO TRAIN SERVICE EXPANSION PROGRAM
BURLINGTON TO HAMILTON STUDY

Ministry of Transportation   GO TRANSIT   THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH   THE REGIONAL MUNICIPALITY OF HALTON

A report documenting the Overview was prepared in June 1987. The alternatives identified within the Overview were reviewed by elected officials, municipal and technical staff, and the public in the first round of public involvement, also in June. The Overview Report is included as Appendix A, and incorporates the Terms of Reference.

The Route Planning phase of the Burlington to Hamilton study took up the remainder of 1987, and involved the detailed analysis of alternatives to arrive at a set of preliminary recommendations. Major activities included:

- assembly of data;
- research of key areas of potential economic benefits, Hunter Street Tunnel, and the CN Hamilton yard;
- meeting with interested parties;
- development of preliminary route and station alternatives;
- examine railway operation questions; and
- analysis of alternatives using factors of Transportation Services, Economic Benefits, Cost, Social Impact, and Natural Environmental Impact.

The results of the Route Planning phase of the study were reviewed by municipal councillors, technical agencies, and the public in November 1987.

The Preliminary Design phase followed, and included the preparation of a recommended scheme that would be sufficiently detailed to be acceptable both to the Ministry of Transportation for Preliminary Design Report purposes and to the Minister of the Environment, to whom the project would be submitted for Environmental Assessment approval.

The phase included the following major activities:

- preliminary design layout, costs, and impacts of the recommended alternative;
- feasibility design of recommended stations;
- detailed study of affected railway to determine feasible levels of service; and
- assessment and mitigation of environmental issues.

The final technical recommendations incorporated the above work and were reviewed by municipal committees of Council, technical agencies, and the public in May and June 1988.

Documentation of the Study and its findings, including the preparation of the Environmental Assessment Report (this document) began in July, 1988. Prior to submission to the Ministry of the Environment for approval, the document was circulated to and reviewed by the key agencies involved in or affected by the project.

3.3 Pre-Submission Consultation

The Burlington to Hamilton Study was undertaken with full and open involvement of technical agencies, municipal and provincial staff, interest groups, elected representatives, and interested members of the public.

3.3.1 Purpose

Extensive consultation was initiated by the Project Team prior to submission of the Environmental Assessment document, so that those groups, officials, reviewing agencies and individuals interested in the project had an opportunity to:

- review and comment on the study design;
- identify "environmentally significant areas/issues"
- be aware of the progress and findings of the study at each of its stages; and
- review and comment on the analysis of alternatives and the technical recommendations.

3.3.2 Mechanism Used for Pre-submission Consultation

The Project Team's combined experience with projects of this type pointed to the use of standard Ministry of Transportation mechanisms to ensure involvement of all interested parties. The technique used was the formation of "Teams" of groups of representatives with common interests, and by direct contact with interest groups and the public at Public Information Centres or through meetings and correspondence at various points during the study.

Exhibit 3 illustrates the makeup of the various Teams and the relationship between the Project Team and all the groups involved in the study. Consultation occurred throughout the entire study, but focused on three review periods: in June, 1987 at the end of the overview component; November, 1987 when the analysis of alternatives was complete; and May - June, 1988 for the final technical recommendations. As well, meetings and correspondence occurred throughout the study as appropriate, either initiated by or requested of the Project Team. In particular, close contact was maintained between the Project Team and CP Rail and CN Rail, through meetings, correspondence, discussions and reviews.

The public involvement and review mechanism was consistent through the three rounds of review, and is described in the following paragraphs.

After review of data and information by Ministry of Transportation and GO Transit executives, meetings were held with the External Team and Technical Advisory Committee to ensure that questions of a technical nature were dealt with and that government staff at all levels were aware of the study status.

Presentations were then arranged at the appropriate Committees of Council of each of the four directly affected municipalities: Region of Hamilton-Wentworth Transportation Services Committee; Region of Halton Planning and Public Works Committee; City of Hamilton Transport and Environment Committee; and City of

Burlington Public Works Committee. The presentations were for information only (although comments and questions were welcome), and no endorsement was sought for the project or recommendations until July, 1988 following the final round of public involvement. The Project Team appeared by request at other Committees on occasion.

Public involvement was actively solicited mainly during the three review periods. Brochures were distributed to 36,000 homes and businesses in the Study Area prior to each set of Information Centres, and all who attended were sent notices of further review periods. All residents adjacent to the rail corridors were specifically notified of the Public Information Centres, through hand-delivered notices. Ontario Government Notices were published in the six major newspapers in the study area, while press, radio and television newscasters covered the study as well. Public Information Centres provided the forum for one-on-one discussions of the study between members of the Project Team and the Public, and were held as follows:

First Round Of Review

3 to 9 p.m., Tuesday, June 16, 1987 - Art Gallery of Hamilton

3 to 9 p.m., Thursday, June 18, 1987 - Burlington City Hall

Second Round Of Review

3 to 9 p.m., Monday, November 23, 1987 - Central Public School, Hamilton

3 to 9 p.m., Tuesday, November 24, 1987 - Burlington City Hall

3 to 9 p.m., Wednesday, November 25, 1987 - Central Public School Hamilton

Third Round of Review

3 to 9 p.m., Tuesday, May 31, 1988 - Central Library, Hamilton

4:30 to 9 p.m., Wednesday, June 1, 1988 - Fairfield Public School, Burlington

3 to 9 p.m., Thursday, June 2, 1988 - Hamilton Convention Centre

The procedures and results of each review round were compiled in reports that were circulated to the Project Team, Municipal Clerks, and Public Libraries after each round. The text of these reports are included here as Appendices I, J and K.

Table 5 details the efforts made to ensure public awareness of the study during each round of review.

Apart from direct conversations that members of the Project Team had with nearly all Information Centre attendees, the most widely used means of communicating concerns or comments about the Study was the completion of comment sheets during the centres. A copy of each comment sheet was included in each round's summary report but, due to volume, these have not been reproduced in this report. Rather, the originals are held on file with GO Transit, at 1120 Finch Avenue West, Downsview, Ontario M3J 3J8. Specific questions raised in the comment sheets were replied to by mail, while general comments were compiled in order to assess public opinions and concerns. The summary reports in Appendices I, J and K document the comments made, and the analysis process in Section 5 incorporates concerns expressed by the public. Numerous letters and telephone calls received over the course of

TABLE 5: PUBLIC AWARENESS PROGRAM

STAGE	ACTIVITY			REVIEW ROUND		
				I (SPRING 1987)	II (FALL 1987)	III (SPRING 1988)
Prior to Info Centres	Municipal Committees Public Meetings		Hamilton-Wentworth Transportation Services	June 9	Nov.10	May 10
			Halton Planning & Public Works	June 10	Nov.9	May 11
			Hamilton Transport & Environment	June 15	Nov.16	May 16
			Burlington Public Works	June 15	Nov.16	May 16
	Publicity	Brochures	mail - Hamilton Study Area	32,000	32,000	32,000
			mail - Burlington Study Area	4,000	4,000	4,000
			hand - adjacent homeowners	no	yes	yes
			mail - previous attendees	no	yes	yes
			mail - Interest Groups/Agencies	yes	yes	yes
			courier - City & Regional Clerks	yes	yes	yes
			courier - Hamilton Library	no	yes	yes
			hand - GO Station ticket counters	yes	yes	yes
			hand - Hamilton GO Train riders	no	no	yes
			displays - Hamilton GO station	no	no	yes
		Ontario Govt. Notices	Hamilton Spectator	June 10, 13	Nov.11, 21	May 18, 28
			Burlington Spectator	June 10, 13	Nov. 11,21	May 18, 28
			Burlington Post	June 10, 13	Nov. 11,21	May 18, 28
			Toronto Star	June 10	Nov.18	May 25
			Toronto Sun	June 10	Nov.18	May 25
			Globe and Mail	June 10	Nov.18	May 25
	Media Reports		Newspaper articles/editorials	yes	yes	yes
			Radio interviews/commentary	yes	yes	yes
	Public Information Centres		Hamilton	Art Gallery June 16	Central School Nov.23, 25	Central Library May 31 Convention Centre June 2
			Burlington	City Hall June 18	City Hall Nov.24	Fairfield School June 1
			Total attendance	200	600	275
			Comment sheets received	73	192	91
Follow up Activities	Summary Report		Copies to Project Team	yes	yes	yes
			Hamilton Public Library	1	1	1
			File with City & Regional Clerks	4	4	4

TABLE 6: MEETINGS WITH INTEREST GROUPS

INTEREST GROUPS	MEETING DATES	MAJOR AREA OF CONCERN	HOW ADDRESSED	REPORT SECTION
Hamilton Central Area Plan Implementation Committee (CAPIC)	July 3, 1987 March 18, 1988 March 30, 1988	Interaction of study recommendations with Central Area Plan, particularly re: parking and redevelopment.	CAPIC resolution in support of study recommendations passed on March 30, 1988 and forwarded to City Planning and Development Committee following a public meeting of the Transport and Environmental Committee concerning the study.	4.3.2 5.5.2 5.5.4 6.3.1 Appendix M
Durand Neighbourhood Association	August 12, 1987	● Possibility of Tunnel reconstruction ● Traffic and parking impact near station ● Redevelopment pressure ● Noise ● Public involvement in study	● Tunnel reconstruction not recommended ● Waterdown Road Station recommended as focus for auto access and parking ● Development pressure is due to background growth; GO impact shown to be minor ● Noise impact shown to be minor ● Full public involvement process carried out	4.2.1 5.5.4 6.3.7
Macnab Street Presbyterian Church/ Macnab South Heritage Committee	August 19, 1987 February 16, 1988	● Noise and vibration ● Visual intrusion in front of church ● Night time operation ● Parking	● Track and switch replacement reduces noise and vibration impact ● Visual impact will be very brief as trains pass ● Service recommended for rush hours, midday, and evenings only ● Church parking retained; Waterdown Road Station recommended as GO parking focus.	4.2.2 5.5.4 6.3.1.1 (d)
Social Planning and Research Council of Hamilton and District	October 19, 1987 February 24, 1988	Public involvement process in study	Ongoing dialogue, correspondence and meetings with S.P.R.C. and documentation of extensive public involvement process.	1.9 3.3 Appendices I, J, K
Regional Municipality of Niagara Public Public Works Committee	December 8, 1987	Possible extension of service to Niagara.	Ministry of Transportation initiated a joint provincial/municipal study into existing and future transportation needs in the Niagara Peninsula, following a request by the Region.	4.4 5.5.1 Appendix M
Royal Botanical Gardens	January 18, 1988 May 5, 1988	Property, visual, vegetation, wildlife and noise impact of expansion in CN corridor within R.B.G. property.	Mitigation measures incorporated in preliminary design to minimize impact. On site inspection with Conservation Authorities and R.B.G. of potentially affected areas.	4.1.3 4.1.6 5.5.5 6.3.4 Appendix B
CP/TH&B Station Subcommittee of Hamilton Local Architectural Conservancy Advisory Committee	February 18, 1988	Preservation of heritage aspects aspects of CP/TH&B Station and impact of site redevelopment.	Station plans include rehabilitation of building and facade and restoration to original use.	4.2.2 5.6.2 6.3.1.1
Regional Municipality of Halton Ecological and Environmental Committee	May 11, 1988	Natural environmental impact of undertaking within Halton.	No impact on Sassafras Woods E.S.A.; mitigation measures during design and construction minimize effect on area.	4.1.3 4.1.6 5.5.5 6.3.4 Appendices B, K

the study were replied to by mail, telephone, or in person.

Interest Groups, or associations of citizens with common interests, played a large part in the public involvement process. A list of groups contacted during the earlier GO-ALRT study was supplemented by City provided lists, and groups were then contacted directly by mail to ensure their awareness of the study and of the opportunity to comment on the project.

During the first two series of Public Information Centres, a 1 1/2 hour period was set aside prior to the public opening for executives of all Interest Groups to attend and express their comments. All those Interest Groups expressing either particular concerns or great interest were met with subsequent to the Information Centres, as noted in Table 6.

3.4 Environmentally Significant Areas/Issues

3.4.1 Definition

In the context of the Environmental Assessment Report - One Stage Submission, environmentally significant areas/issues are defined as: "Areas/Issues of the natural, cultural, economic and social environment for which the reviewing ministries/agencies/the public, require detail relative to specific environmental impacts and commitment to mitigation. This information is necessary to facilitate decision-making relative to the acceptance of the environmental assessment and approval of the undertaking".

3.4.2 Identification Process

The study has been carried out under the Environmental Assessment guidelines, and hence any area or issue identified as being environmentally significant (as per the definition in Section 3.4.1) by either the Project Team or any group or individual involved in the consultative process is listed in Table 15 at the end of Section 4. Table 24 in Section 6 gives a comprehensive summary of the study's environmentally significant areas/issues, impact of the undertaking, and recommended mitigation measures.

Section 4

Existing Conditions

4. EXISTING CONDITIONS

The conditions existing in the study area are documented in this Section, as are the methods of data collection, limitations on the data, and any identified environmentally significant areas/issues. Since the GO-ALRT study which preceded the current study considered a wide variety of route alternatives including detailed coverage of the study area, a vast amount of documentation was gathered during its course concerning the conditions existing at the time (1983 - 85). This documentation, updated where appropriate to the most recent times, provides the basis for much of the information presented in this section.

The study area is from the Burlington GO Station on Fairview Street along the CN Rail corridor to Hamilton Junction and via the CN and CP corridors to both downtown Hamilton stations. The area of study of direct effects is generally within 100 metres of the rail tracks, while the entire downtown core of Hamilton and surrounding potentially affected areas are considered for secondary impacts. All existing rail corridors in central Hamilton beyond the stations (Ferguson Avenue, Gage Belt Line, and Victoria Avenue/Kinnear Yards) are also part of the area studied.

Much of the information presented in the text of this Section is summarized in Exhibits 4A through 4D.

4.1 Natural Environment

4.1.1 Climate

i) Data Sources

Section 4.2.1 of the GO-ALRT Oakville to Hamilton Section Status Report (October 1985) provided the relevant climatic information for the study area.

ii) General Description

The climate of the study area is of the "cool continental warm summer" type (Partnam 1952), with the moderating influence of Lakes Ontario and Erie being noted.

Mean daily temperature in January: -4 degrees C
Mean daily temperature in July: 21 degrees C
Mean Frost-Free season: May 10 - October 15
Mean annual precipitation: 76 cm
Mean annual snowfall: 122 cm
Mean precipitation May to September: 36 cm
Predominant wind direction: Southwest

iii) Significance and Sensitivity

Occasional winter snowstorms can significantly affect highway traffic (thereby GO Buses) between Hamilton and Toronto, and occasionally cause delays to train service. The expansion of GO Train service to Hamilton is not expected to affect the local climate.

4.1.2 Physiography and Soils

i) Data Sources

The basic data source is Natural Environment Technical Report 5.0 (Geology, Physiography, and Soils) prepared for the GO-ALRT Program Hamilton Project. Section 4.1 in the Environmental Status Statement for the GO-ALRT Burlington Project also provides information. Borehole records on some structural plans were referred to in consideration of the Hunter Street Tunnel and various bridge crossings.

ii) General Description

a) Burlington

Glacial and post glacial erosional and depositional activity have shaped the topography of the study area. Two major physiographic regions, the Iroquois Plain and the South Slope, dominate the area.

The Iroquois Plain is a slightly sloping lowland that forms a border on Lake Ontario approximately two miles wide. It is a nearly level terrace consisting of the shore and foreshore of former Lake Iroquois, a glacial lake of the Pleistocene era.

To the northeast, the plain gradually narrows and the South Slope widens to enter the study area in the vicinity of King Road. This region, which forms the eastern portion of the study area, is the southern slope of an interlobate moraine located in the north. The topography of the study area ranges from hilly in the west to gently undulating in the east.

The Pleistocene geology of the area contains examples of glaciolacustrine and glacial deposits and landforms. The raised shoreline of the former glacial lake, Lake Iroquois, generally parallels the Lake Ontario shoreline in the vicinity of the study area. The shoreline crosses to the north of the CNR railway line west of Waterdown Road. Immediately west of this crossing, a Lake Iroquois gravel bar is found. Here, the most readily accessible deposits have been depleted. In 1953, a section of a mammoth's tusk predating the last ice age was discovered here. West of King Road, the shoreline crosses to the north side of Highway 403 and generally follows Highway 403 to the east.

The Halton Till Plain, from the Pleistocene period, extends across the northern section of the study area north of the former Lake Iroquois Shoreline. The plain is fluted east-west with superimposed low ridges from glacial action. To the south, a band of Lake Iroquois offshore sands occurs. A wedge of Ordovician shale is found in the east between the Halton Tills and the Lake Iroquois sands, commencing at the Freeman Interchange to the west and bounded approximately by the QEW to the north and the CNR to the south.

The entire area is underlain by the Queenston Formation, the upper part of the Ordovician System. The Queenston Formation is brick-red unfossiliferous shale with narrow green bands.

The soils in the study area range from gently undulating sand loams in the east to heavily rolling clay loams in the west intersected by pronounced ravines. The sandy loams of the study area have developed from lacustrine deposits while the clay loams were derived from the glacial Halton till deposited during the last Halton ice advance.

b) Hamilton

The bedrock of the area is Queenston shale which is covered by a broad range of materials ranging from clays through sands. Overburden depths range from zero on valley walls to forty metres in the valleys. The shale is usually underlain by silty clay till which is in turn covered by a range of lacustrine or beach materials.

The study area lies within the Iroquois Plain physiographic region. This plan was formed during the late Pleistocene epoch when Lake Iroquois deposited wave eroded material on beaches and bars. The most striking deposit in the Hamilton section of the study area is the gravel bar which separates Cootes Paradise from Hamilton Harbour.

The plain has been cut in many areas by creek systems and former shorelines. As a result, much of the local topography is heavily dissected and many steep slopes are present.

Six surface soils are present in the study area. In general, the surface soils closest to the lake have sandy loam surface textures underlain by sand material. The soils farther away from Cootes Paradise and the Hamilton Harbour have a silty clay loam surface underlain by clay till. Most of the surface soils identified have been modified by erosion and deposition processes and by cut and fill practices. The most extensive areas of fill are found adjacent to Hamilton Harbour and Cootes Paradise.

In addition to surface soils, seven subsurface soil zones characterize the study area. These are delineated and described in Table 7.

Table 7: Subsurface Soil Zones and Characteristics

ZONE	LOCATION	MATERIAL	THICKNESS
A	North Slope	Hard, stiff silty clay	less than 3 m
B	Cootes Paradise, Mercer's Glenn, Grindstone Creek	Organic silty clay overlying sand and silty clay till	over 26 m
C	Hamilton Bar	Granular deposits	18m to 54m
D	Chedoke Creek Valley	Recent refuse and decayed sanitary fill overlying organic clays, silty sands and silty clay till.	up to 21 m
E.	Hamilton Plain	Fill overlying sand to silty sand, occasional gravel and silty clay to silty clay fill.	6m to 24m
F.	Hamilton Harbour	Recent harbour sediments overlying sand, silty clay and silty till.	variable
G.	Railway Fill	Sand to silty sand with gravel.	up to 30 m

iii) Significance and Sensitivity

The presence of distinct overburden layers and some side wall seepage at the layer interfaces may result in erosion if a disturbance causes soil slippage.

The steep slopes in the area also present a concern with respect to erosion. Ravine areas are of particular concern.

Soil erosion by wind or water has the potential to affect the Royal Botanical Gardens. Erosion which results in the addition of soil to water bodies and courses within the study area could also affect water quality and fisheries resources.

In parts of the study area, ground water is often located near the soil surface, and in specific locations there has been evidence of artesian flow. Erosion could become a problem if these waters are released as a result of disturbance to the overlying soil.

Fill areas are also a source of concern. Fill has been deposited in a number of locations, with the area of the CN Hamilton rail yards along the southern shore of Hamilton Harbour and the landfill site now occupied by Kay Drage Park being principal examples. The soil fill materials are highly variable physically and their disturbance could seriously affect local water quality and subsequently vegetation, fisheries and wildlife resources. The Queenston Shale is considered some of the best material in the Province of Ontario for the production of red tile and pottery. MNR and the Region of Halton have identified Mineral Resource Protection Area 1 (south of the CN corridor west of Unsworth Avenue) as a potential area for shale protection.

4.1.3 Vegetation

i) Data Sources

The main data sources are Natural Environment Technical Report N1.0 (Vegetation) from the GO-ALRT Hamilton Project and Section 4.1.6 of the Environmental Status Statement for the Burlington Project. In addition, the CN corridor in the vicinity of the Royal Botanical Gardens was inspected with Conservation Authority and R.B.G. staff on May 5, 1988. Other documents were researched and the study area visited by Ecoplans Ltd. staff, whose report is reproduced in its entirety in Appendix B.

ii) General Description

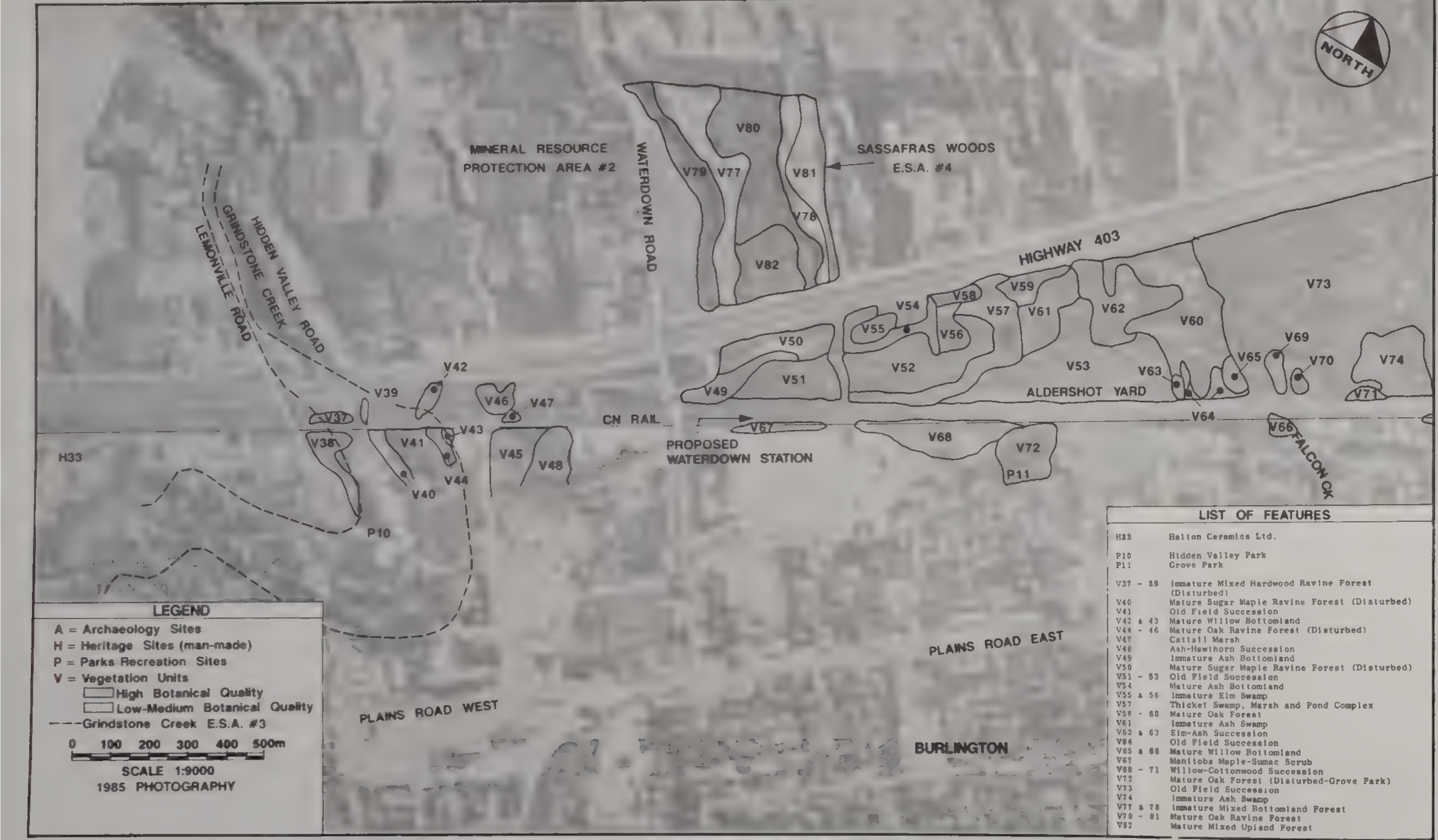
The vegetation in the study area varies from original deciduous forest stands to urban planting. Distinct vegetation units have been noted on Exhibit 4 and are described in Table 8.

iii) Significance and Sensitivity

The primary areas of concern are the vegetation units in the vicinity of Waterdown Road, including Sassafras Wood (Halton E.S.A. 4) and the wooded embankments and ravine slopes adjacent to the CN Rail line between Hidden Valley and Desjardins Canal. Some nationally and provincially rare flora exist in these zones,

TABLE 8: VEGETATION

Vegetation Unit	Location	Description
V-74,75	West of King Road	Two small woodlots with immature elm and ash cover.
V-72	Grove Park	Grove of mature mixed oaks (Red, White, possibly Scarlet).
V-52-73	CN lands east of MGS property	Oak woodlands, wetlands and old field succession adjacent to Highway 403, connecting to woodlands along Falcon Creek to east. Wildlife corridor to Niagara Escarpment. National, Provincial and Regionally Significant plant species (Scarlet and Swamp White Oaks, bristly greenbriar); wildlife habitat linkage.
V-49,50	East of Waterdown Road Highway 403 to CN tracks. (MGS property)	Remnant woodland along Grindstone Creek tributary. One species of regional significance observed; wildlife habitat linkage.
V-77-82	East of Waterdown Road Northeast of Highway 403	Sassafras woods (Halton Region ESA #4) known to contain at least 23 plant species of national, provincial or regional significance. One of 36 identified Carolinian sites in southern Ontario.
V-37-48	Hidden Valley Road to Waterdown Road	Steep forested ravine walls and woodlot along Grindstone Creek and its tributaries to the east.
V-35,36	Halton Ceramics Brickyard	Oak Woodland remnants immediately north and south of right-of-way contain at least two plant species of national, provincial or regional significance (Sassafras and Dryland Blueberry).
V-19-36	Royal Botanical Gardens/Grindstone Creek/Hidden Valley Road	Woodlands associated with Grindstone Creek (Halton ESA #2) known to contain at least 24 plant species of national, provincial or regional significance north and south of the existing right-of-way.
V-23,24,26	Old Cootes Paradise Outlet	Ravine woodlands and former Cootes Paradise outlet form part of Hamilton-Wentworth ESA #16 (RBG-Cootes Paradise) and Area of Natural and Scientific Interest (ANSI). No significant plants identified in limited GO-ALRT field studies in this area.
V-19,20,21, 25	Hamilton Harbour/ Sunfish Pond	Wooded embankments, shores, and emergent aquatic vegetation margin. These ensure slope stability and provide wildlife/fisheries habitat.
V-17,18,19	East of CNR tracks at Valley Inn Road	Wooded embankments, shores, and localized emergent aquatic vegetation margin, providing slope stability and wildlife/ fisheries habitat. Located in Hamilton-Wentworth ESA #16 (RBG-Cootes Paradise); no significant plant species.
-	West of CNR tracks at Valley Inn Road	Shrub succession on steep slopes, below RBG Ornamental gardens.
-	Desjardins Canal to Hamilton Junction West of CNR tracks	Local pockets of shrub succession in former disturbed areas; gentle to steep slopes; coniferous plantations on slopes below RBG Memorial Gardens.
-	Desjardins Canal	Emergent aquatic vegetation, located in Hamilton-Wentworth ESA #16 (RBG-Cootes Paradise) and Area of Natural and Scientific Interest (ANSI). No significant plant species; potential fisheries value.
V-14	CN Yards to Desjardins Canal - Harbour Edge	Weedy species along shoreline; localized emergent aquatic species; potential fisheries habitat.
V-15,16	CN Yard to Desjardins Canal Slopes below Dundurn Castle and Harvey Park	Mature mixed hardwoods on steep slopes with predominant cover by introduced species; providing slope stability and wildlife habitat.
-	CN Station To CN Yards	Street and shade tree plantings of mixed deciduous species, 10 - 90 cm diameter.
V-13	CP Track - Hamilton Cemetery to Desjardins Canal	Shrub succession in former disturbed areas; gentle to steep slopes; no significant plant species.
V-11	Below Hamilton Cemetery - West of CPR Tracks	Remnant oak woodland with dryland elements, including Dryland Blueberry, species of national, provincial and regional significance.
V-8,9,10, 12	Below Hamilton Cemetery - East of CPR Tracks	Steep embankments with immature to mature mixed hardwood cover; cemetery grounds with forest remnants and ornamental plantings; no significant species.
V-6-13	King St. to Hamilton Cemetery CP Corridor	Steep embankments with predominantly immature mixed hardwood cover; no significant species.
V-4,5	CP Corridor from Queen St. to Main St. (depressed track)	Steep embankments along CP rail line, with immature Manitoba Maple and shrub cover; no significant species.
V-3	Victoria Avenue Yard	Manitoba Maple - aspen embankment succession. Low in quality.



LEGEND

A = Archaeology Sites
H = Heritage Sites (man-made)
P = Parks Recreation Sites
V = Vegetation Units
▭ High Botanical Quality
▭ Low-Medium Botanical Quality
---- Grindstone Creek E.S.A. #3

0 100 200 300 400 500m
SCALE 1:9000
1985 PHOTOGRAPHY

LIST OF FEATURES

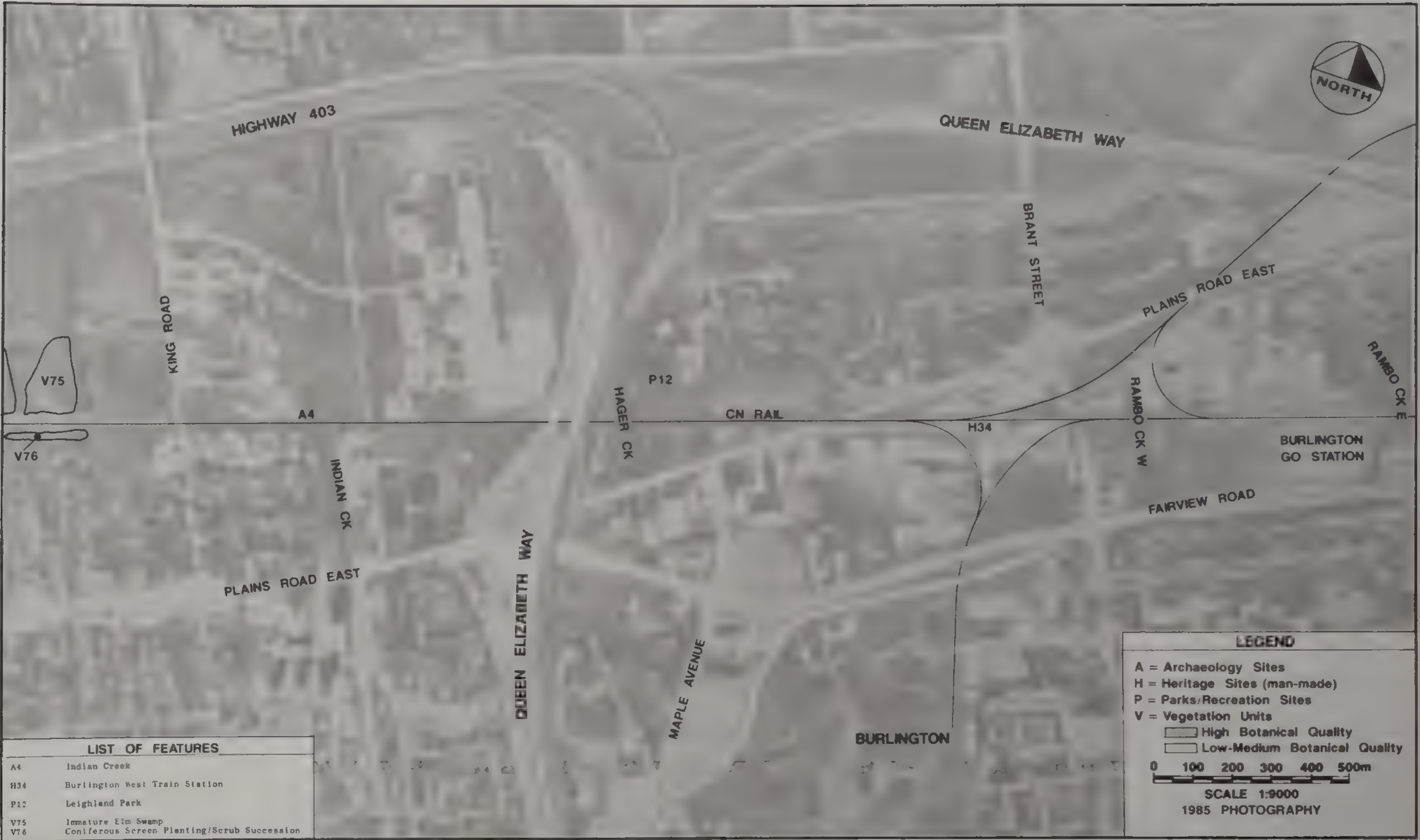
H33	Halton Ceramics Ltd.
P10	Hidden Valley Park
P11	Grove Park
V37 - 39	Immature Mixed Hardwood Ravine Forest (Disturbed)
V40	Mature Sugar Maple Ravine Forest (Disturbed)
V41	Old Field Succession
V42 & 43	Mature Willow Bottomland
V44 - 46	Mature Oak Ravine Forest (Disturbed)
V47	Cattail Marsh
V48	Ash-Hawthorn Succession
V49	Immature Ash Bottomland
V50	Mature Sugar Maple Ravine Forest (Disturbed)
V51 - 53	Old Field Succession
V54	Mature Ash Bottomland
V55 & 56	Immature Elm Swamp
V57	Thicket Swamp, Marsh and Pond Complex
V58 - 60	Mature Oak Forest
V61	Immature Ash Swamp
V62 & 63	Elm-Ash Succession
V64	Old Field Succession
V65 & 66	Mature Willow Bottomland
V67	Manitoba Maple-Sumac Scrub
V68 - 71	Willow-Cottonwood Succession
V72	Mature Oak Forest (Disturbed-Grove Park)
V73	Old Field Succession
V74	Immature Ash Swamp
V77 & 78	Immature Mixed Bottomland Forest
V79 - 81	Mature Oak Ravine Forest
V82	Mature Mixed Upland Forest

EXHIBIT
4B

ENVIRONMENTAL FEATURES
KING ROAD TO HIDDEN VALLEY

GO TRAIN SERVICE EXPANSION PROGRAM
BURLINGTON TO HAMILTON STUDY

Ministry of Transportation   GO TRANSIT   THE REGIONAL MUNICIPALITY OF HAMILTON WENTWORTH   THE REGIONAL MUNICIPALITY OF HALTON



LIST OF FEATURES

A4	Indian Creek
H34	Burlington West Train Station
P12	Leighland Park
V75	Immature Elm Swamp
V76	Coniferous Screen Planting/Scrub Succession

LEGEND

A = Archaeology Sites
H = Heritage Sites (man-made)
P = Parks/Recreation Sites
V = Vegetation Units
▭ High Botanical Quality
▭ Low-Medium Botanical Quality

0 100 200 300 400 500m

SCALE 1:9000
1985 PHOTOGRAPHY

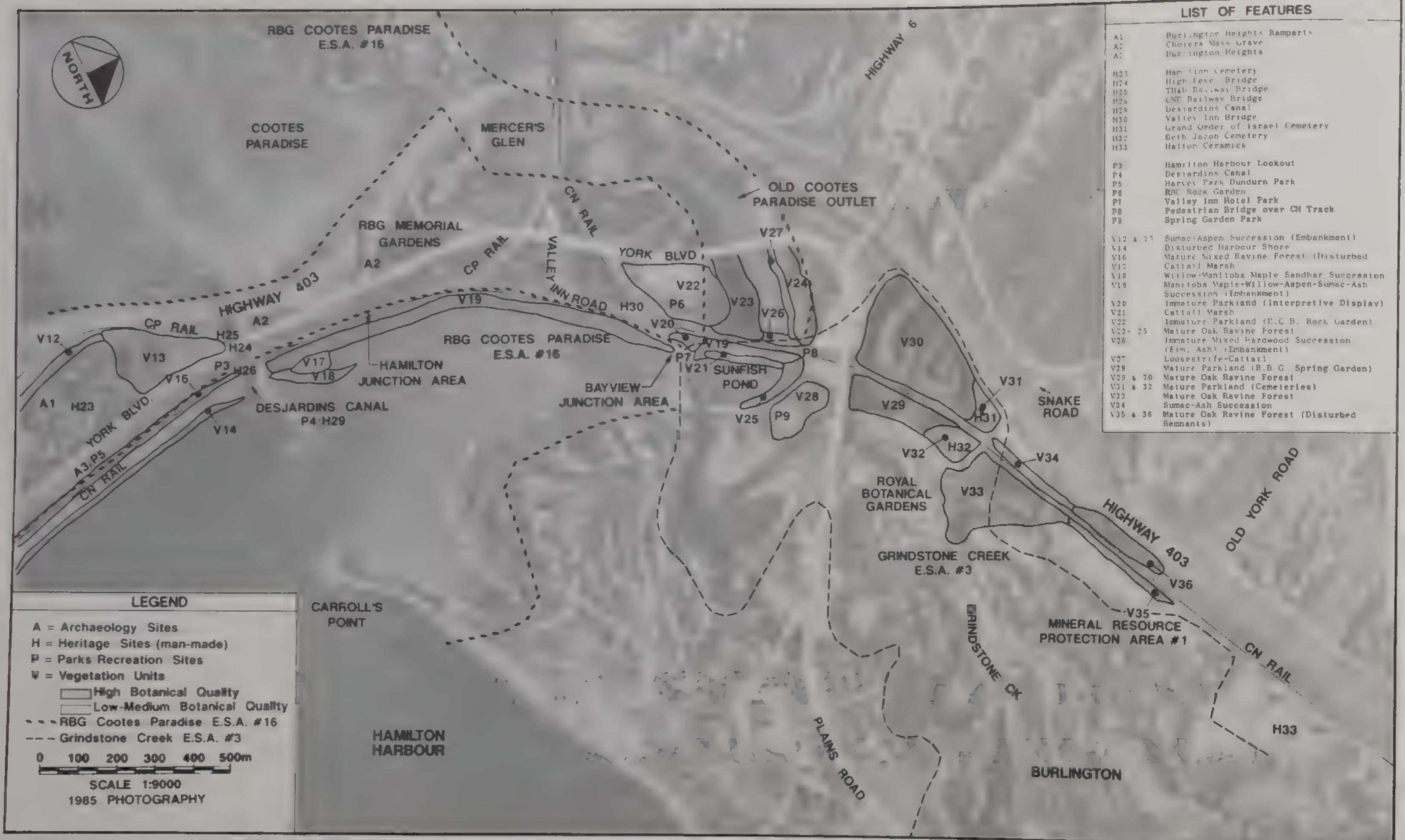
GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

Ministry of Transportation GO TRANSIT The Regional Municipality of Hamilton-Wentworth The Regional Municipality of Halton

ENVIRONMENTAL FEATURES
BURLINGTON STATION TO KING ROAD

EXHIBIT
4A



LEGEND

A = Archaeology Sites
H = Heritage Sites (man-made)
P = Parks Recreation Sites
V = Vegetation Units
▭ High Botanical Quality
▭ Low-Medium Botanical Quality
- - - RBG Cootes Paradise E.S.A. #16
— — Grindstone Creek E.S.A. #3

0 100 200 300 400 500m
SCALE 1:9000
1985 PHOTOGRAPHY

LIST OF FEATURES

A1	Burlington Heights Ramparts
A2	Cholera Mass Grave
A3	Burlington Heights
H23	Hamilton Cemetery
H24	High Level Bridge
H25	TH&B Railway Bridge
H26	CNR Railway Bridge
H29	Desjardins Canal
H30	Valley Inn Bridge
H31	Grand Order of Israel Cemetery
H32	Beth Jacob Cemetery
H33	Halton Ceramics
P3	Hamilton Harbour Lookout
P4	Desjardins Canal
P5	Harvey Park Dundurn Park
P6	RBG Rock Garden
P7	Valley Inn Hotel Park
P8	Pedestrian Bridge over CN Track
P9	Spring Garden Park
V12 & 13	Sumac-Aspen Succession (Embankment)
V14	Disturbed Harbour Shore
V16	Mature Mixed Ravine Forest (Disturbed
V17	Cattail Marsh
V18	Willow-Manitoba Maple Sandbar Succession
V19	Manitoba Maple-Willow-Aspen-Sumac-Ash Succession (Embankment)
V20	Immature Parkland (Interpretive Display)
V21	Cattail Marsh
V22	Immature Parkland (R.C B. Rock Garden)
V23- 25	Mature Oak Ravine Forest
V26	Immature Mixed Hardwood Succession (Elm, Ash) (Embankment)
V27	Loosestrife-Cattail
V28	Mature Parkland (R.B G Spring Garden)
V29 & 30	Mature Oak Ravine Forest
V31 & 32	Mature Parkland (Cemeteries)
V33	Mature Oak Ravine Forest
V34	Sumac-Ash Succession
V35 & 36	Mature Oak Ravine Forest (Disturbed Remnants)

EXHIBIT

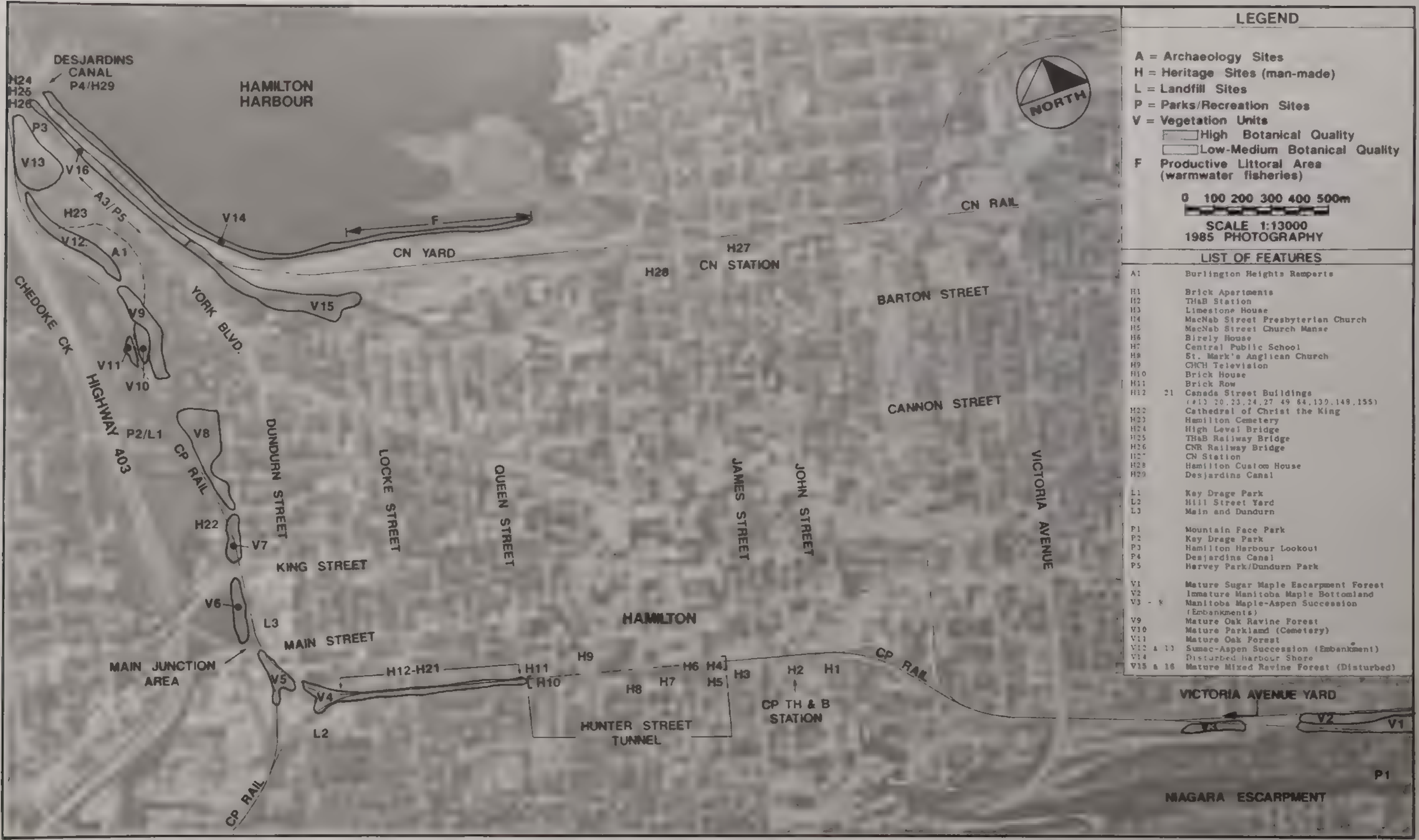
4C

ENVIRONMENTAL FEATURES
HIDDEN VALLEY TO DESJARDINS CANAL

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

Ministry of Transportation
GO TRANSIT
The Regional Municipality of Hamilton-Wentworth
The Regional Municipality of Halton



LEGEND

A = Archaeology Sites
H = Heritage Sites (man-made)
L = Landfill Sites
P = Parks/Recreation Sites
V = Vegetation Units
▭ High Botanical Quality
▭ Low-Medium Botanical Quality
F Productive Littoral Area (warmwater fisheries)

0 100 200 300 400 500m
SCALE 1:13000
1985 PHOTOGRAPHY

LIST OF FEATURES

A1	Burlington Heights Ramparts
H1	Brick Apartments
H2	TH&B Station
H3	Limestone House
H4	MacNab Street Presbyterian Church
H5	MacNab Street Church Manse
H6	Birely House
H7	Central Public School
H8	St. Mark's Anglican Church
H9	CHCH Television
H10	Brick House
H11	Brick Row
H12 - 21	Canada Street Buildings (#13 20,23,24,27 49 64,139,149,155)
H22	Cathedral of Christ the King
H23	Hamilton Cemetery
H24	High Level Bridge
H25	TH&B Railway Bridge
H26	CNR Railway Bridge
H27	CN Station
H28	Hamilton Custom House
H29	Desjardins Canal
L1	Key Drage Park
L2	Hill Street Yard
L3	Main and Dundurn
P1	Mountain Face Park
P2	Key Drage Park
P3	Hamilton Harbour Lookout
P4	Desjardins Canal
P5	Harvey Park/Dundurn Park
V1	Mature Sugar Maple Escarpment Forest
V2	Immature Manitoba Maple Bottomland
V3 - 8	Manitoba Maple-Aspen Succession (Embankments)
V9	Mature Oak Ravine Forest
V10	Mature Parkland (Cemetery)
V11	Mature Oak Forest
V12 & 13	Sumac-Aspen Succession (Embankment)
V14	Disturbed Harbour Shore
V15 & 16	Mature Mixed Ravine Forest (Disturbed)

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

ENVIRONMENTAL FEATURES
CENTRAL HAMILTON

EXHIBIT
4D

and some steep slopes are sensitive to fill, regrading, and erosion. The contribution of vegetation to slope stability is significant, as is its role in providing wildlife habitat. The area of Dryland Blueberry west of the CP tracks near Hamilton junction has been taken off the provincial list of significant areas but it may be regionally significant.

4.1.4 Water Resources and Fisheries

i) Data Sources

Information was obtained from Natural Environment Technical Reports N 3.0 (Water, Biota and Sediments) and N 4.0 (Fisheries) for the GO-ALRT Hamilton Project and Sections 4.1.4, 4.1.5, and 4.1.8 of the Environmental Status Statement for the GO-ALRT Burlington Project. Reference was also made to the Hamilton Waterfront Master Plan.

ii) General Description

a) Water Resources

The study area includes numerous permanent and semi-permanent streams, mainly tributaries of the Grindstone Creek system. The existing rail corridors pass adjacent to Hamilton Harbour, where a major effort is being made to improve water quality. Table 9 provides a description of the surface water resources in the study area, from east to west.

b) Fisheries

Fish habitat is limited to Grindstone Creek, Hamilton Harbour, and its associated ponds and inlets. A few pollution - tolerant species (minnow, white sucker) exist in Indian and Falcon Creeks. Table 10 describes fisheries resources in the study area.

iii) Significance and Sensitivity

Only those areas where the rail right of way crosses or abuts significant watercourses are noted as environmentally significant/sensitive areas, and specific concerns regarding water and fisheries are as follows:

- Grindstone Creek and feeder tributaries (Hidden Valley Road to Waterdown Road): sensitive to erosion, sedimentation at crossings (culvert upgrading, etc.).
- Sunfish Pond and Grindstone Creek Valley: Sunfish Pond, Long Pond (former Cootes Paradise outlet) and Grindstone Creek provide spawning, nursery and/or feeding habitat for number of species - sensitive to infilling, obstruction of migration routes, sedimentation, etc.
- Shoreline habitat along Hamilton Harbour at Hamilton Junction: significance to warm water fish - provides connecting link between Grindstone Creek and shoreline to south of Desjardin Canal for fishes spawning in Grindstone Creek. In-filling could disrupt this habitat function.
- Desjardins Canal: sedimentation concerns with respect to water quality. Canal is a fish migration route between Hamilton Harbour and Cootes Paradise and its

TABLE 9 : WATER RESOURCES

LOCATION	DESCRIPTION
Grindstone Creek and feeder tributaries (Hidden Valley Road to Waterdown Road)	Major surface water feature. Receives local groundwater seepage upstream (escarpment). Warm water system, high coliform bacteria and phosphorus levels. Receives Hwy. 403 runoff (sand, silt, salt, etc.). Potential sedimentation concerns due to bridge work and fills at Hidden Valley Road crossing. Also culvert upgrading at tributary crossings (minor).
Hendrie's Ponds	Comprise seven small ponds in Grindstone Creek Valley. Shallow, turbid, rated medium in quality. Located within Mineral Resource Protection Area 1. No direct impact by R.O.W. work. Culvert upgrading required at small feeder tributary to east of Old York Road.
Sunfish Pond	Small oblong pond, with steep side slopes. Sensitive to sedimentation. If track added south of existing tracks railway fill may be widened in the water by up to 11 metres at west end.
Old Cootes Paradise Outlet	Rated low in water quality. Linear pond, steep slopes, sensitive to sedimentation. If track added north of existing tracks, railway fill may extend out to 11 metres at east end.
Hamilton Harbour	Shoreline fill may extend out to 5 metres at localized sites north of canal to accommodate extra track requirements. Concerns include sediment disturbance (release of metals), fish habitat loss, water quality effects.
Desjardins Canal	Bridge upgrading, embankment cuts may cause sedimentation of canal. Existing water quality impaired by urbanization, high nutrient loadings, heavy metals in sediments.
Chedoke Creek	Not affected by track upgrading. Creek is rated poor for water quality and may receive leachate inputs from Kay Drage landfill.
CN Station to Hamilton Junction	No stream channels affected. Control of dust and runoff during construction required. Bridge alterations at Desjardins Canal, if required, may result in sediment release to canal. In worst case shoreline fill may extend out to 5 meters at localized sites north of canal to accommodate extra tracks. Concerns include sediment disturbance (release of heavy metals), fish habitat loss, water quality effects.

TABLE 10: FISHERIES

LOCATION	DESCRIPTION
Sunfish Pond and Grindstone Creek Valley	Sunfish Pond provides nursery habitat for several fish species including black crappie and bluegill sunfish. A culvert under the existing CNR track permits fish movement between Sunfish Pond and the former Cootes Paradise outlet, known as Long Pond. Long Pond is known to provide spawning and nursery habitat for largemouth bass. These areas are likely to figure prominently in any future attempts to rehabilitate fisheries in Hamilton Harbour. The link between the harbour and Grindstone Creek is important. Grindstone Creek is the only tributary to the harbour where pike spawning has been observed in recent years. Rainbow trout spawn in Grindstone Creek during the early spring and the creek provides nursery habitat for the juveniles. A large population of white suckers also spawns in the creek and other species including brown bullheads move between the harbour and the lower reaches of the creek. Sunfish Pond is a popular angling area.
Hamilton Harbour Shore between Hamilton Junction and Bayview Junction	Area is shallow water habitat, of some significance to warm water fishes. This shoreline should provide a connecting link between Grindstone Creek and the shoreline further to the south for fishes spawning in Grindstone Creek (i.e. northern pike). It is the opinion of some that this function is not currently being fulfilled due to the absence of aquatic macrophytes along this shoreline.
CN Yard to Hamilton Junction-Harbour shoreline and Desjardins Canal	South of Desjardins Canal there is a narrow band of shallow-water habitat. This narrow band supports adult largemouth and smallmouth bass. Some of this shoreline has extensive macrophyte growth (29-90% cover). This is important habitat for warm water game fish.
Crossing of Desjardins Canal between Hamilton Harbour and Cootes Paradise.	Extensive fish movement occurs through this connecting channel. Many of the warm water species of the area undergo seasonal movements between Cootes Paradise and the harbour. In addition rainbow trout which spawn in certain tributaries to Spencer Creek pass through this channel. The area in the vicinity of the canal is also a popular area for local anglers. There is a small area of emergent macrophytes immediately to the north of the connecting channel. This type of habitat is currently available in very few areas of the harbour, and provides nursery habitat for several fish species including bluegill sunfish and largemouth bass.

vicinity is popular with local anglers. Emergent macrophytes north of channel provide nursery habitat.

- Hamilton Harbour shoreline southeast of Desjardins Canal: important fish habitat and fish movement areas-shoreline aquatic plant habitat is important in supporting smallmouth and largemouth bass.

4.1.5 Wildlife

i) Data Sources

The GO-ALRT studies of 1983 - 1985 involved a significant amount of field observation of wildlife throughout the corridor, as well as literature reviews. These activities are well documented in Section 4.1.7 of the Environmental Status Statement for the Burlington section and Natural Environment Technical Report N2.0 for the Hamilton Project. These reports, supplemented by recent field observations and research, form the basis of the current reports.

ii) General Description

Although the rail corridors are generally in urban or suburban areas, the presence of features such as the Hamilton Harbour, Royal Botanical Gardens, and Sassafras Woods has resulted in exceptionally abundant and diverse wildlife for such an area. Table 11 summarizes the major wildlife features in the study area.

TABLE 11 : WILDLIFE

LOCATION	DESCRIPTION
Woodland/wetland complex on CN lands east of MGS property	- high diversity of migrating birds - Green Frog, Bull Frog, Painted Turtle, Snapping Turtle - good wetland (pond), good herptiles - potential impact from track widening, layover yards, expansion of parking lot from Waterdown Station.
Pond outflow, CN lands east of MGS property	- movement of turtles to RR tracks for egg laying - probably disruption of drainage patterns could affect wetlands along edge of tracks and hence water quality in Grindstone Creek or movements/ foraging of reptiles and amphibians.
Sassafras Woods ESA	- ESA, Carolinian Canada Site (see Section 4.1.6) - direct destruction of habitat on west edge and southwest corner of ESA if possible interchange constructed - corresponding extension of the zone of influence of roadways into the ESA.
Grindstone Creek Halton ESA #2	- over 100 species of nesting birds (1978), several (10) uncommon species - excellent for migrant birds - 268 migrant species recorded (1978) - large winter resident bird population - 2 uncommon mammals - 2 uncommon snakes - continuous wooded linkage from escarpment to Hamilton Harbour - unusually high quality - tracks cross tributaries leading into Grindstone Creek at 9 locations
Old Cootes Paradise Outlet	- part of Hamilton-Wentworth ESA #16 (RBG-Cootes Paradise) - possible corridors for wildlife movement along shores and between Grindstone Creek ESA and Cootes Paradise (See Fisheries).
Hamilton Harbour/ Sunfish Pond	- possible corridors for wildlife movement along shores - Eastern spiny softshell turtle (threatened species) potentially present.
Steep slopes along tracks/shoreline Vegetation).	- possible corridors for mammal/bird movement along shoreline/paths (see
Desjardins Canal Area	- Water/shore birds - several species of reptiles and amphibians present - small marsh - within Hamilton/Wentworth ESA #16 (RBG-Cootes Paradise). (See Vegetation.)
Desjardins Canal to CN Yard	- Possible corridors for mammal/bird movement along shoreline/park slopes (See Vegetation)

iii) Significance and Sensitivity

The preservation of wildlife habitat as described in Section 4.1.3 (Vegetation) is a significant issue. The Hamilton Harbour/Sunfish Pond/Desjardins Canal shoreline provides habitat for reptiles and amphibians, some of which may be sensitive to disturbance. The preservation of woody vegetation, especially along streams and ravines and in the Sassafras Wood ESA, is important to nesting and migrating birds.

4.1.6 Designated Environmentally Sensitive Areas

i) Data Sources

The study area is adjacent to or includes parts of three designated Environmentally Sensitive Areas (ESA's) as defined by the Region of Halton and the Region of Hamilton-Wentworth in their respective Environmentally Sensitive Areas studies. These studies form the basis for the comments in this section.

ii) General Description

The three identified ESA's in the study area are shown in Exhibit 4 and are described as follows:

- **Halton Region ESA No. 4: Sassafras Woods:**

  One of 36 critical unprotected natural areas in the Carolinian Life Zone of Canada. Fulfills two ESA criteria:
  - area is a habitat with limited representation in Ontario and Canada
  - area provides habitat for nationally, provincially and regionally rare plants and animals.
- **Halton Region ESA No. 3: Grindstone Creek Valley**

  Fulfills 5 of 9 possible ESA criteria:
  - distinctive and unusual landform
  - the best migratory bird stopover in the Region
  - unusually high diversity of biological communities and associated plants and animals
  - habitat for nationally, provincially and regionally rare plants and animals
  - scientific value for bird watching, migration studies, and ecological study in conjunction with RBG.
- **Hamilton-Wentworth Region ESA No. 16: RBG-Cootes Paradise**

  Also designated an Area of Natural and Scientific Interest (ANSI) by Ontario Ministry of Natural Resources. Fulfills 7 of 9 possible ESA criteria:
  - unusual and high quality biological community.
  - largest marsh in Hamilton-Wentworth Region.
  - high diversity of biological communities and associated plants and animals (many rare species of plants, birds, herptiles, fish).
  - large area with many undisturbed sections
  - important sanctuary for many species, particularly wetland species.
  - used for basic biological research by RBG, McMaster University and others.
  - high aesthetic value.

iii) Significance and Sensitivity

The potential impacts of the undertaking on the ESA's are:

- Halton Region ESA No. 4: Sassafras Woods
  Alterations to Waterdown Road interchange on north side of Highway 403 may have primary and secondary impacts on the western edge and southwest corner of the ESA.
- Halton Region ESA No. 3: Grindstone Creek Valley
  May affect forested sections, ravine systems, and fish/ wildlife breeding habitats and movement corridors.
- Hamilton-Wentworth Region ESA No. 16: RBG-Cootes Paradise
  May affect shore habitat areas along Hamilton Harbour and Old Cootes Paradise Outlet.

4.2 SOCIAL ENVIRONMENT

4.2.1 Communities

i) Data Sources

a) Burlington

The Official Plan of the City of Burlington, Section 4.2.1 of the GO-ALRT Burlington Section Environmental Status Statement, field observation, and discussion and correspondence with local residents provided the information presented in this Section. The information is current as of Spring 1988.

b) Hamilton

The Official Plan of the City of Hamilton, Technical Reports S1.0 to S9.0 for the GO-ALRT Hamilton Project, field observations, and discussions and correspondence with local residents provided the information presented in this Section. The information is current as of Spring 1988.

ii) General Description

a) Burlington

Two residential communities abut the CN Rail corridor in Burlington: Leighland on the north side of the corridor east of the Q.E.W.; and Dover south of the tracks between Waterdown Road and the Q.E.W. (see Exhibit 4).

Leighland community is a small stable zone of mainly owner-occupied detached dwellings and rental semi-detached units. Dover community is a stable, older blue collar area of families, mainly in owner-occupied detached houses. Immediately adjacent to the CN tracks is a strip of owner-occupied semi-detached homes and a belt of light industry/small warehouses. Some property near the Q.E.W. remains undeveloped.

b) Hamilton

The rail corridors under study enter central Hamilton from the northwest and split at Hamilton Cemetery. The CN tracks go east along Hamilton Harbour, through Hamilton yard, and eastward to a zone of heavy industry, while the CP rail corridor parallels Highway 403 before swinging eastward through a residential district to the commercial core of the city and onward to the base of the Niagara escarpment (see Exhibit 4D).

In the CN corridor, the only residential community near the tracks is a mixed group of homes and small businesses in the general vicinity of the CN Station. The south limit of the North End community is separated from the tracks near the station by a right of way reserved for the planned Perimeter Industrial Road.

The CP route passes through a number of neighbourhoods, beginning with an adjacent corner of the Strathcona Community near King Street. The corridor is in open cut and bordered immediately by smaller single-family homes for the five blocks of its passage through the Kirkendall North Community, then enters a tunnel under the Durand neighbourhood. The east end of the tunnel at City Hall marks the start of the commercial core part of the route, where the CP/TH&B Station is surrounded by a mix of high density residential, office, institutional, and retail buildings. East of the station, the tracks jog to the south, passing through a lower density mixed use part of the Corktown Community and eastward along the base of the Niagara Escarpment where the tracks are bordered by an extensive stretch of older two storey single family detached homes.

iii) Environmental Significance and Sensitivity

a) Burlington

Concerns of some Dover Community residents, as voiced at the Public Information Centres, were the noise impact of the existing CN Rail operations, particularly in the Aldershot Yard area, and the prospect of increased usage or expansion of the tracks. Additional traffic through local streets as a result of a station at Waterdown Road, and aspects of safety and visual intrusion for those homes backing on the CN corridor were also raised as community concerns.

The Leighland community, being nearly surrounded by major highway and railway corridors, is less sensitive to changes in condition than the Dover area. Increased noise levels are a significant issue.

b) Hamilton

Since the study is limited to considering service alternatives in existing corridors, major environmentally significant community issues are limited to direct noise impacts along the corridors and Station-generated impacts on adjacent communities in the areas of traffic and parking. The effect on property values, vibration, air pollution, the possible need for additional property, and the possible disruption of the community during construction activities have also been identified as significant issues by local residents.

CN Corridor

There is little sensitivity to increased train frequency or noise in the CN corridor, since it has been a major rail corridor for over a century. The existing GO Train service, the CN Yard, and the proposed Perimeter Industrial Road all utilize the corridor. The impact of additional station-generated traffic and parking in the area of the CN Station is a significant issue.

CP Corridor

Noise due to additional trains is a significant issue in that portion of the CP route near residential areas, as is vibration to a lesser extent on those properties abutting the corridor. The potential effect on the Durand neighbourhood during the reconstruction period of the Hunter Street Tunnel, if required, is a significant issue there, as is the potential for Station-generated parking, traffic, and development pressure in both the Durand and Corktown communities. The potential drop in real estate values due to a perception of the above possible impacts is a concern of property owners abutting the corridor.

4.2.2 Heritage Resources

i) Data Sources

The comprehensive man-made heritage studies carried out for the GO-ALRT program included detailed field survey work, meetings with local heritage groups, and references to a great amount of earlier published material. This work, as documented in Sections 4.4.2 and 4.4.3 of the Burlington Project Environmental Status Statement and Technical Reports S11.0, S14.0 and S14.1 for the Hamilton Project formed the basis of the current study. This wealth of background material was supplemented by further research and consultation with local architectural conservancy and heritage groups.

ii) General Description

Heritage Resources, as defined by the Ministry of Citizenship and Culture, include properties of historical, architectural, archaeological, aesthetic and scenic interest. The rail corridors in the study area include numerous such properties, ranging from nearby areas of historic interest to adjacent historic structures to elements of the railways themselves (such as bridges and stations).

a) Historic Resources

The study area was originally visited and settled by Indians, evidence of which has been uncovered at several archaeological sites near waterways. Any archaeological sites within the rail corridors have been destroyed by construction activity over the years. The first European settlement of the area occurred in the 1770's, and the heights around Hamilton Junction played a strategic role in the War of 1812.

The railways played a significant historical role in the development of the Hamilton area.

The narrow peninsula between Cootes Paradise and Hamilton Harbour channelled all the transportation links between Hamilton and Toronto, with Valley Inn Road operating as a busy toll road through much of the 1800's. The Desjardins Canal was cut through the peninsula and west to Dundas by 1837, and the Great Western Railway (later Grand Trunk Railway and now the CN Rail line) was pushed through the study area in the 1850's. Mass cholera graves from that period exist in the area.

Significant railway expansion occurred in the 1890's, resulting in the filling in several places of the former Cootes Paradise outlet and the bridging of several roadways. Structures on the CN line at Hidden Valley, Valley Inn Road, and Desjardins Canal date from 1895-96. Along with railway expansion, road traffic grew through the 1800's between Hamilton and Burlington. At Desjardins Canal, a high level suspension bridge was built in 1852 over the railway swing bridge, and was replaced in 1858 by a wooden one after being blown down. The second bridge was shortly condemned and replaced by a wood bridge at track level. The third high level crossing was opened in 1897 upon the construction of the CP Rail Toronto connection at the lower level. The current High Level Bridge was opened in 1932, and served as the major northern gateway to the City until the construction of Highway 403 in the mid-1950's.

The Grand Trunk Railway Station was located near Stuart Street until its replacement by the existing CN Station in 1931. The Grand Trunk corridor extended eastward along the Niagara Peninsula, and was linked with Lake Erie by the line constructed down Ferguson Avenue and up the Escarpment in 1873 by the Hamilton and Lake Erie Railway. The latter line had a station between King and Main Streets in use until consolidation with the CN station in 1929.

The Toronto, Hamilton and Buffalo Railway was constructed through the centre of Hamilton in 1895, and incorporated a twin track cut and cover tunnel under four blocks of Hunter Street and a large station at the northeast corner of James and Hunter Streets. It was not until 1912 that the railway's Toronto connection to the Grand Trunk line at Desjardins Canal was opened. The great delays caused to downtown traffic by the level crossings near the station led to a major reconstruction in the 1930-33 period, whereby the railway was raised, crossing roads bridged or closed and a daring modern style station replaced the original.

Historic development in the Burlington portion of the study area is more recent, with only the VIA Rail Station west of Brant Street and the Halton Ceramics Ltd. Brickworks being of any historic note.

Exhibit 4 details the heritage features adjacent to or potentially affected by the railway corridors within the study area.

b) Architectural Resources

Table 12 lists the architecturally significant structures adjacent to or associated with the rail lines in the study area. The information for the Hamilton structures is excerpted from the GO-ALRT Hamilton Project Social Environment Technical Report S11.0 (Man-Made Heritage) of May 15, 1984.

c) Archaeological Resources

Three sites of possible archaeological interest are located

TABLE 12 : ARCHITECTURAL / HERITAGE FEATURES

FEATURE	NAME	LOCATION	DATE	DESCRIPTION	RECOGNITION
H-34	VIA Rail Burlington Station	Brant St., Burlington		Historic railway station adjacent to the CN tracks, to be taken out of operation with shift of VIA rail to the Burlington GO Station in 1988	Ministry of Citizenship & Culture and the Burlington LACAC - Architectural and Historic interest.
-	Dundurn Castle	610 York Blvd	1832-1835	"Son of a respected but deeply indebted government officer, Allan MacNab (1798-1862) yearned for the stature of a Scottish Laird. Dundurn Castle, a regency mansion in the romantic Italianate style, was central to his fancy, but also to his many financial problems."(Weaver). "This mansion was built 1832-35 and named after the family ancestral seat in Scotland. Leader of the Tory Conservatives, MacNab was speaker of the Legislative Assembly on several occasions and Prime Minister of Canada 1854-56." (plaque text) Architect: Robert Charles Wetherell.	Historical Designation By-law No. 77-239 LACAC - Buildings of Interest
-	Hamilton Military Museum	York Blvd. at Dundurn Street	c.1850	One storey painted stucco and masonry structure, with simple hip roof, in Regency style matching Dundurn Castle	
H-33	Salton Ceramics Ltd	Haworth Avenue		Operational brickworks with kilns, chimney, and building.	H.C.C. - recommended for inclusion as a potential heritage feature.
H-32	Beth Jacob Cemetery	Snake Road	c.1886	Small private cemetery	
H-31	Grand Order of Israel Cemetery	Snake Road	c.1914	Small Jewish cemetery	
H-30	CN Rail Bridge	Valley Inn Road	c.1898	Single span steel beam bridge for two tracks on abutments of rough face limestone blocks	
H-29	Desjardins Canal	Cootes Paradise	1837	Canal constructed 1826-1837 through natural sand bar formation separating Cootes Paradise and Hamilton Harbour. Original purpose was to provide water transportation to Dundas	
H-28	Hamilton Custom House	51 Stuart St.	1858-1860	"Designed by Frederick James Rastrick, this sandstone building is an authentic example in Canada of the Italian Renaissance Revival. The rhythmic progression of arched and pedimented windows, the monumentality of the stonework, the elaborate treatment of the central bay and the finesse of the classical decoration substantially contribute to the artistic success of the building The Custom House stands as one of Canada's finest examples of revival architecture" (Chapple). Currently used by Ontario Classical Martial Arts Heritage Foundation.	LACAC - Historic & Architectural Merit.
H-27	CN Railway Station	360 James St. N.	1931	Designed in the Neo Classical Style, this stone structure features a grand pedimented entry supported by Ionic columns. The formal grandeur of the Station and its relative isolation make it a landmark in Hamilton. As such, it provides an effective terminus for the James North streetscape of 19th century commercial buildings extending south towards Gore Park.	LACAC - Architectural Merit
H-26	CN Railway Bridge	Desjardins Canal	c.1897	Simple span for two tracks; cut limestone abutments	
H-25	CP Railway Bridge	Desjardins Canal		Five span truss and girder bridge for two tracks.	
H-24	High Level Bridge	CP Rail Desjardins Canal	1932	Steel cantilever bridge provided a direct highway link between Hamilton and Toronto. Stone columns at each end are highly visible and mark the entrance to the City.	Designated heritage bridge M.T.O. site #36-23
H-23	Hamilton Cemetery	York Boulevard	c.1850	Municipal cemetery, containing long ramparts from the War of 1812.	
H-22	Cathedral of Christ the King	714 King St. W.	1933	Designed in the Gothic Revival style, the cathedral and its adjacent structures serve a variety of functions for the Christ the King parish and the diocese of Hamilton. The Chancery Office (originally St. Thomas Aquinas School) was built in 1922 and enlarged in 1933 with the construction of the cathedral. In 1967 the original chancery office was built. In 1970 a new school was erected on the site with the old school being converted into its present function as chancery office.	
H-12	Houses	13,20,23,24,27,49,84, 139,148,155 Canada St.	-	Sites with local historical/architectural value	
H-11	Row House	107-111 Queen St. S.	1885	This three unit row house is simple in style, yet has similar detailing to others of its era. Bracketed eaves and a continuous porch give character to an otherwise plan structure.	LACAC - Historic and Architectural Merit
H-10	Brick House	114 Bess St. S.	c.1880	The corner location of this Victorian residence encouraged the use of two-storey projecting bays capped by triangular gables, on both street facades. This duality is emphasized by the identical window treatment, brickwork and detailing	LACAC - Architectural Merit.
H-9	CHCH Television	162 Hunter St. W.	1983	This modern "space age" building features large areas of flat and curved aluminum metal cladding panels. Architect: Moffat Kinoshita Partnership.	
H-8	St. Marks Anglican Church	130 Bay St. S.	c.1880	This modest single storey Gothic Revival Church features a three storey bell tower. The simple peaked roof is uninterrupted by gables or windows, except at the crossing. The low brick walls, with slender paired windows, emphasize the domestic scale of this church, which provides a useful link to the adjacent homes.	
H-7	Central Public School	75 Hunter St. W.	1853	Sited south of Hamilton Civic Square, this beautiful, symmetrical building features three bays of limestone construction with the center bay highlighted by a five storey clock tower.	LACAC - Historic and Architectural Merit.
H-6	Birely House	109-111 Charles St.	1855	Built in 1855 by Lewis D. Birely, this double townhouse was constructed during Hamilton's "Limestone period". Although built in the vernacular style as opposed to any particular historic style, the townhouses reflect a high level of design and craftmanship. This building is an integral part of the MacNab Street Presbyterian Church block; a historical island of architectural merit in the city centre.	LACAC - Architectural Merit
H-4,5	MacNab Street Presbyterian Church	116 MacNab St. S.	1857	The MacNab Street Presbyterian Church represents an early and noteworthy example of the Gothic Revival church in Hamilton. Substantial and straightforward in design, the church was built of limestone, locally quarried from the escarpment, and, as such, was part of a significant group of stone buildings erected in Hamilton in the 1840's to the 1860's.	LACAC and ACO - Considerable Architectural Merit.
H-3	Limestone House	124 James St. S.	1850	This three storey limestone building with raised basement is the sole remnant of a four building stone terrace completed in 1859. Original windows have been removed and replaced with plate glass, in a recent renovation.	LACAC - Considerable Architectural Merit.
-	Alexandra Square	135 James St. S.	c.1965	This modern office tower of curtain wall construction is set back from James Street South, on a raised plaza.	LACAC - Architectural Merit
H-2	CP/TH&B Station	36 Hunter St. E.	1932	When Fellheimer and Wagner, the architects for the New York Central line, were brought from New York City, they discarded traditional design with its applied surface ornamentation and opted instead for the clean straight lines and flat smooth surfaces of the Art Modern Style. Corner windows cogently state the use of the modern curtain wall with an internal structural system. The interior has likewise survived intact	LACAC and ACO - Historic and Architectural Merit.
H-1	Brick Apartments	135 John St. S.	c. 1890	This four storey, orange brick building features a unique two storey passageway from street to rear yard. Also of note are the two projecting bay windows with divided panes, and the alternating flat and semi-circular window arches	CIHB List.

adjacent to or in areas potentially affected by expansion of the railway corridors. All three are in the vicinity of Desjardins Canal, and their locations are on file with the Ontario Ministry of Citizenship and Culture.

A mass grave for victims of cholera epidemics that swept Hamilton in 1832, 1854 and 1855 is located just north of the Canal between York Boulevard and Highway 403. Additional mass graves could be located nearby or in the general vicinity of the Hamilton Cemetery.

Both the east and west sides of the Burlington Heights peninsula hold remnants of activities in this strategically important area from the War of 1812. Some earthworks and ramparts remain, although other items of interest such as barracks, magazines, batteries, and a grave yard appear to have been destroyed by later construction. Artifacts of the period might be recovered from the area.

d) Aesthetic/Scenic Interest

View of and from the CN railway corridor in Burlington are frequently screened by adjacent vegetation, road embankments, and development. The corridor is visible in open areas near the Q.E.W. from higher ground to the north. The Halton Ceramics chimney provides a visual focal point, and views from the corridor as it crosses several ravines in the area are of interest.

Towards the west, the vicinities of Grindstone Creek, the Royal Botanical Gardens, Sunfish Pond, Hamilton Harbour and Cootes Paradise offer many interesting panoramic vistas, including water bodies and natural areas. The rail embankments are a noticeable component of the landscape, and rail cars are visible to R.B.G. visitors as they pass.

On the Hamilton side of Desjardins Canal, views are of a more urban character, although Hamilton Harbour and the cemetery continue to play a role in the setting. The CN rail yards dominate the waterfront, although Dundurn Castle is visible above. The CP corridor is at the base of the cemetery embankment and only visible when adjacent to Highway 403. The CP tracks, in retaining a below-grade profile past King and Main Streets and right through the Hunter Street Tunnel to the Station, minimize the presence of and views from the corridor. The elevated portion of the tracks from the station to Victoria Avenue is a dominant feature in ground-level street views in the area.

iii) Significance and Sensitivity

a) Historic Resources

The original railway structures, such as the CN Rail Hidden Valley, Valley Inn Road and Desjardins Canal crossings and the CP Rail Hunter Street Tunnel date from the mid-1890's and are of some historic note. All of the above are very sensitive to railway expansion and due to age, would be liable for replacement or reconstruction. The VIA Burlington and CP/TH&B Stations are recognized as having historic merit.

b) Architectural Resources

The three railway stations in the study area - VIA Burlington, CN Hamilton and CP/TH&B - are recognized as having architectural merit and would be sensitive to any functional or exterior condition changes. Numerous other buildings in the Hunter Street West area as well as Dundurn Castle are of architectural significance. Sensitivity to change is limited by the fact that they are located in a constantly changing and redeveloping urban area.

c) Archaeological Resources

The mass graves and remnants of the Burlington Heights ramparts in the vicinity of Hamilton Cemetery are the only sites in the study area known to be of archaeological significance. They could be disturbed or further remnants uncovered if railway expansion occurred in the area.

d) Aesthetic/Scenic Interest

The most significant part of the study area, and most sensitive to change from an aesthetic viewpoint, is the segment between Snake Road and Hamilton Cemetery. Railway activities are a somewhat incompatible element in the natural and man-made environment of water, gardens, ravines, and greenery. On the other hand, highway, railway, and canal construction has played a significant role in forming the viewed landscape. The area is sensitive to further railway expansion.

4.3 Economic Environment

4.3.1 Population and Employment

i) Data Sources

The information in this Section is excerpted mainly from the Economic Development Assessment Report prepared by Cresap Barnard for this study. The Report is included as Appendix C, and is based on thorough research of available background census and regional development data, as well as interviews with key groups and officials in the area. The Cresap Barnard Report deals with Hamilton, while Burlington figures are extracted from the Ministry of Transportation's June 1987 "Population and Employment Forecasts for the Greater Toronto Area (TARMS Zones).

ii) General Description

Population and employment figures are compiled for both the overall region wide picture and for the CN and CP/TH&B Station vicinities in Hamilton. For the Stations, a 750 metre radius circle, or a ten minute walk, was taken to be the area directly relevant to the Station.

a) Population

The Region of Hamilton-Wentworth's population has grown in recent years, while the City of Hamilton's population has remained relatively steady. Looking to the future, the Region is likely to sustain its positive growth rates as long as there are no major downturns in the economy or in the competitiveness of the Greater Toronto Area.

The following Table 13 summarizes the recent population changes in the Region. Growth in the Region is stronger now than in the 1970's, but weaker than the other Regions (Durham, York, Peel, Halton) closer to Metro Toronto.

TABLE 13: HAMILTON-WENTWORTH REGIONAL POPULATION GROWTH 1991-1986

MUNICIPALITY	1981	1982	1983	1984	1985	1986	% GROWTH 1981-1986	% OF REGI 1986 TOT
Hamilton	[illegible]	308,102	307,178	306,256	307,960	306,728	0.1	[illegible]
Stoney Creek	36,762	37,481	39,505	40,552	41,964	[illegible]	[illegible]	[illegible]
Flamborough	24,470	24,575	24,600	24,624	25,541	26,142	6.8	6.2
Dundas	19,586	19,699	19,719	19,738	20,081	20,118	2.7	4.7
Ancaster	14,428	14,733	14,747	14,762	16,542	17,624	19.7	4.1
Glanbrook	9,765	9,585	8,627	8,635	9,446	9,592	-1.8	2.3
TOTAL	411,445	416,175	414,376	414,567	421,534	423,398	2.9	100.0
	C	A	A	A	A	C		

Sources: A: Ministry of Revenue, Assessment Division
C: Census of Canada

The Toronto Census Metropolitan Area is the largest source of migrants to the Hamilton-Burlington area. In Hamilton-Wentworth, most growth is occurring in suburban areas, as young adults move from the City to the suburbs, leaving behind smaller households and an older population below the escarpment while the upper City grew by nearly an equivalent amount, thereby keeping the overall City of Hamilton population stable.

The Hamilton-Wentworth population is forecast to grow to 435,700 by 1991 and to 445,000 in 2001. The main growth areas will be Ancaster, Dundas and Flamborough, with Hamilton population increasing nominally.

Within the City, the population of the core area is expected to grow by only approximately 6 percent between 1981 and 2001, with the Central and Durand neighbourhoods accounting for most of the growth and the North End population declining.

In comparing the CN and CP/TH&B Station catchment areas (750 metre radius), the population of the CP/TH&B area is expected to grow from 12,890 in 1985 to 14,120 by 2011, while that of the CN area is projected to decline from 6,900 to 6,600 over the same period.

The population of the part of Burlington west of King Road was 10,088 in 1981 and is projected to grow by 19 percent to 12,008 by 1991. A further increase to between 13,600 and 17,600 is projected to 2011.

b) Employment

The employment picture in Hamilton has been strong since the 1982-83 recession, as the local economy diversified into the service sector and the traditional role of the heavy manufacturing area began to change. The overall Hamilton-Burlington CMA employed labour force was 280,500 in 1986, with

93,400 in the service sector and 76,200 (down from 91,600 in 1981) in the manufacturing sector.

The service sector, focused in the Central and Beasley areas, will likely continue to be the primary source of growth. Within 750 metres of the CP/TH&B Station there were 21,860 employees in 1985, projected to increase to 25,747 by 1991 and in the order of 27,500 in 2011. In comparison, employment in the CN Station area was 7,330 in 1985, with growth to 9,690 in 1991 and approximately 10,500 in 2011 projected.

Within the western part of Burlington (west of King Road), employment of 3,447 in 1981 was projected to increase to 3,953 by 1991 and in the 5,000 range by 2011.

iii) Significance and Sensitivity

Limited potential for significant population growth exists in the study area, but growth in outlying parts of the Hamilton-Wentworth region such as Dundas, Ancaster, and Flamborough will translate into increased demand for drive-through and parking facilities at the Waterdown Road Station.

The expansion of GO Train service between Hamilton and Toronto plays a significant role in the Hamilton-Wentworth economic development strategy, where it is seen as helping attract employment opportunities to the Region. However, the sensitivity of the employment picture in the study area to changes in GO Train service appears to be quite limited.

4.3.2 Land Use

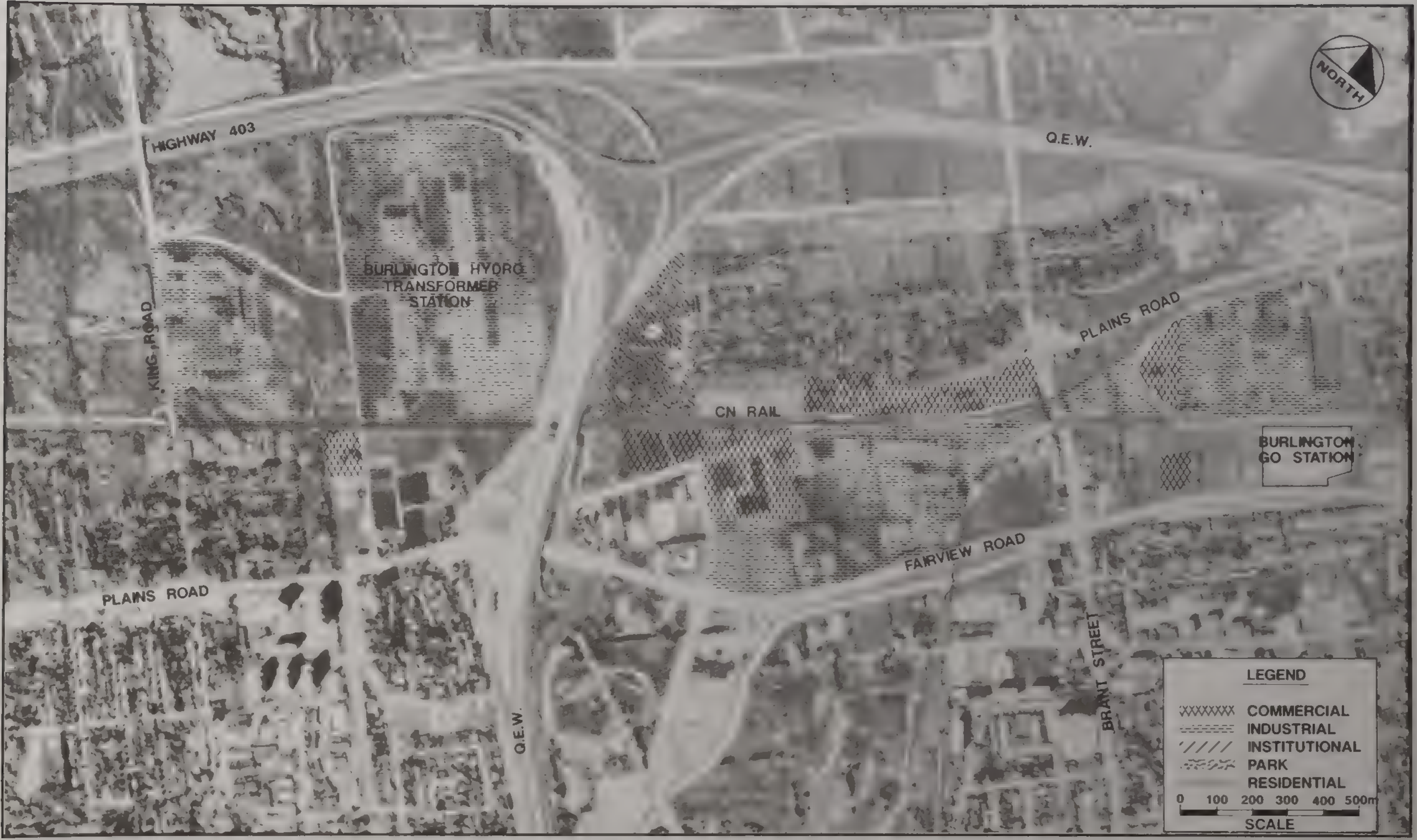
i) Data Sources

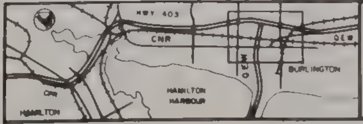
The communities in the study area are described in Section 4.2.1 while specific land use patterns are shown in Exhibit 5. Those land uses associated with the Economic Environment - commercial, industrial, and high density residential - in Hamilton are described in this Section based on the Cresap Barnard Economic Assessment Report, attached to this report as Appendix C.

ii) General Description

The general land use character of central Hamilton is mixed institutional, retail and office types focused on the Civic Square area. The downtown is surrounded by a fringe of high density mixed residential and commercial uses, with numerous vacant parcels. Beyond the transition zone, low density residential uses spread to natural boundaries or to heavy industrial areas near the waterfront.

The past few years have seen a number of major developments and redeveloped properties in the downtown, such as the Copps Coliseum, Hamilton Convention Centre, Eaton Centre, CIBC Tower, Standard Life Building, Sheraton Hotel, and the Piggot/Sun Life Condominiums. Other major projects have been proposed or are underway, including development of a Waterfront Park, new Regional headquarters, numerous condominiums, and mixed office





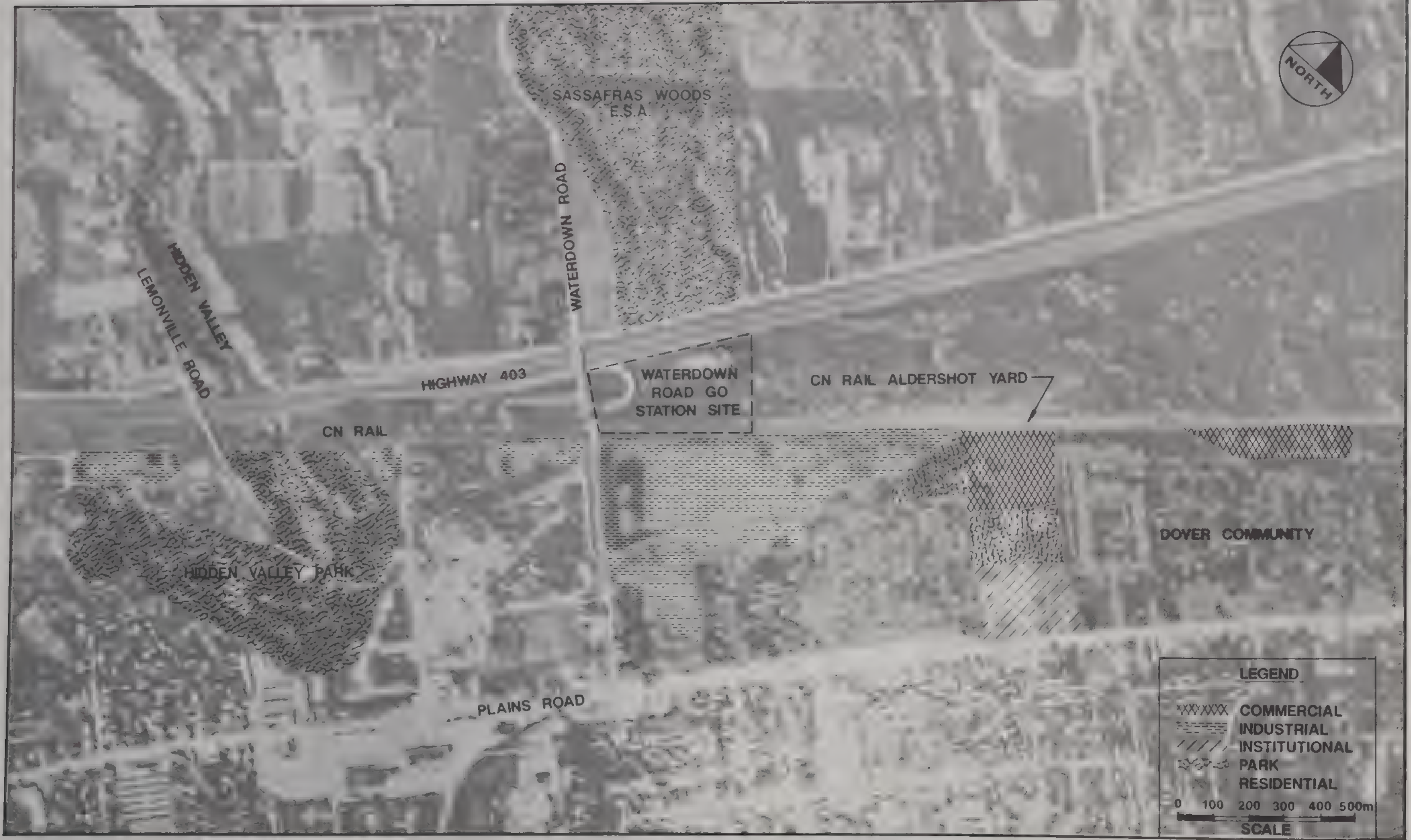
GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

LAND USE - BURLINGTON STATION TO KING ROAD

EXHIBIT

5A



EXHIBIT

5B

LAND USE - KING ROAD TO HIDDEN VALLEY

GO TRAIN SERVICE EXPANSION PROGRAM

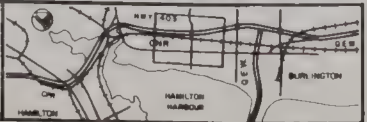
BURLINGTON TO HAMILTON STUDY

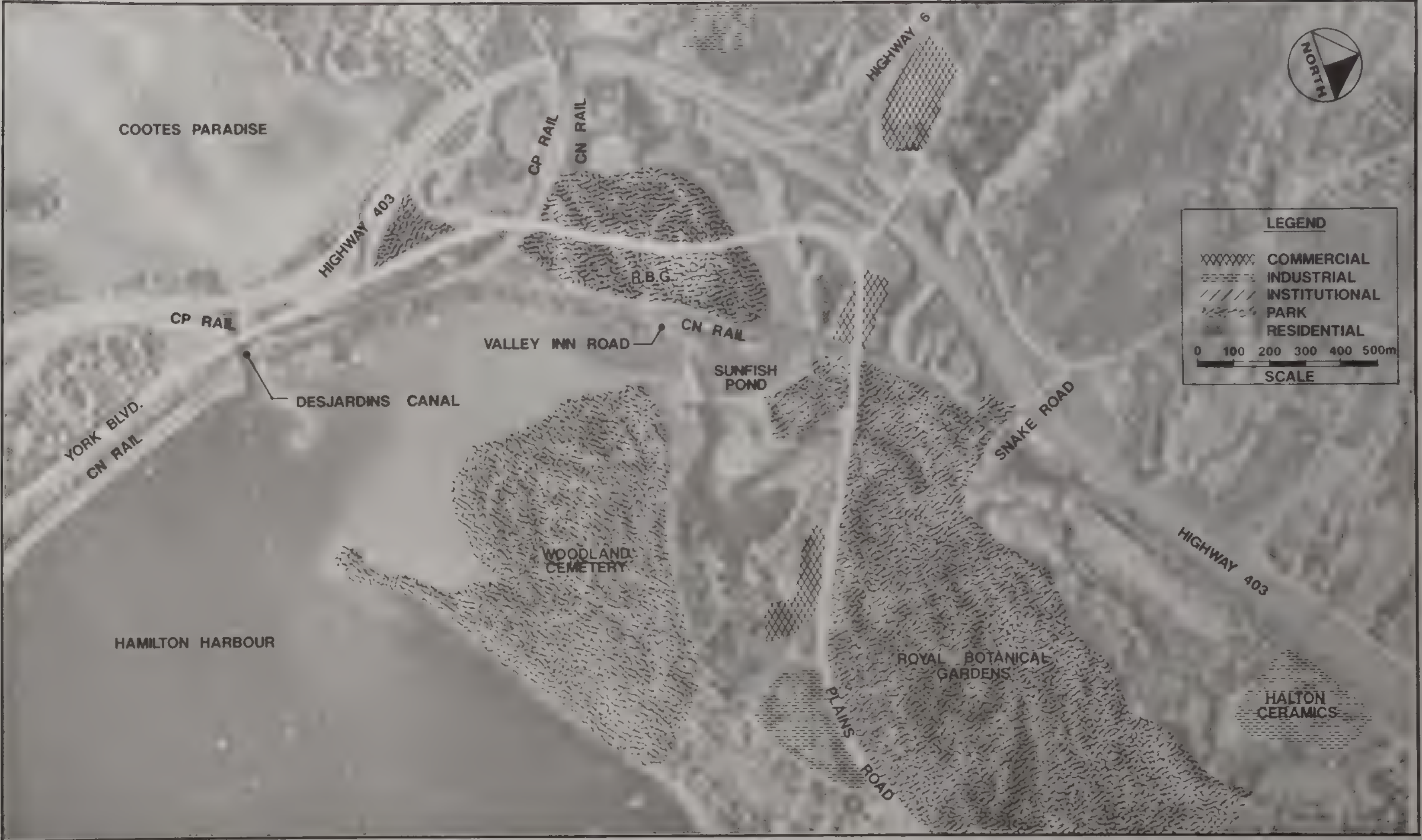
Ministry of Transportation

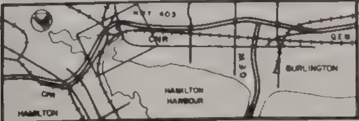
GO TRANSIT

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

THE REGIONAL MUNICIPALITY OF HALTON







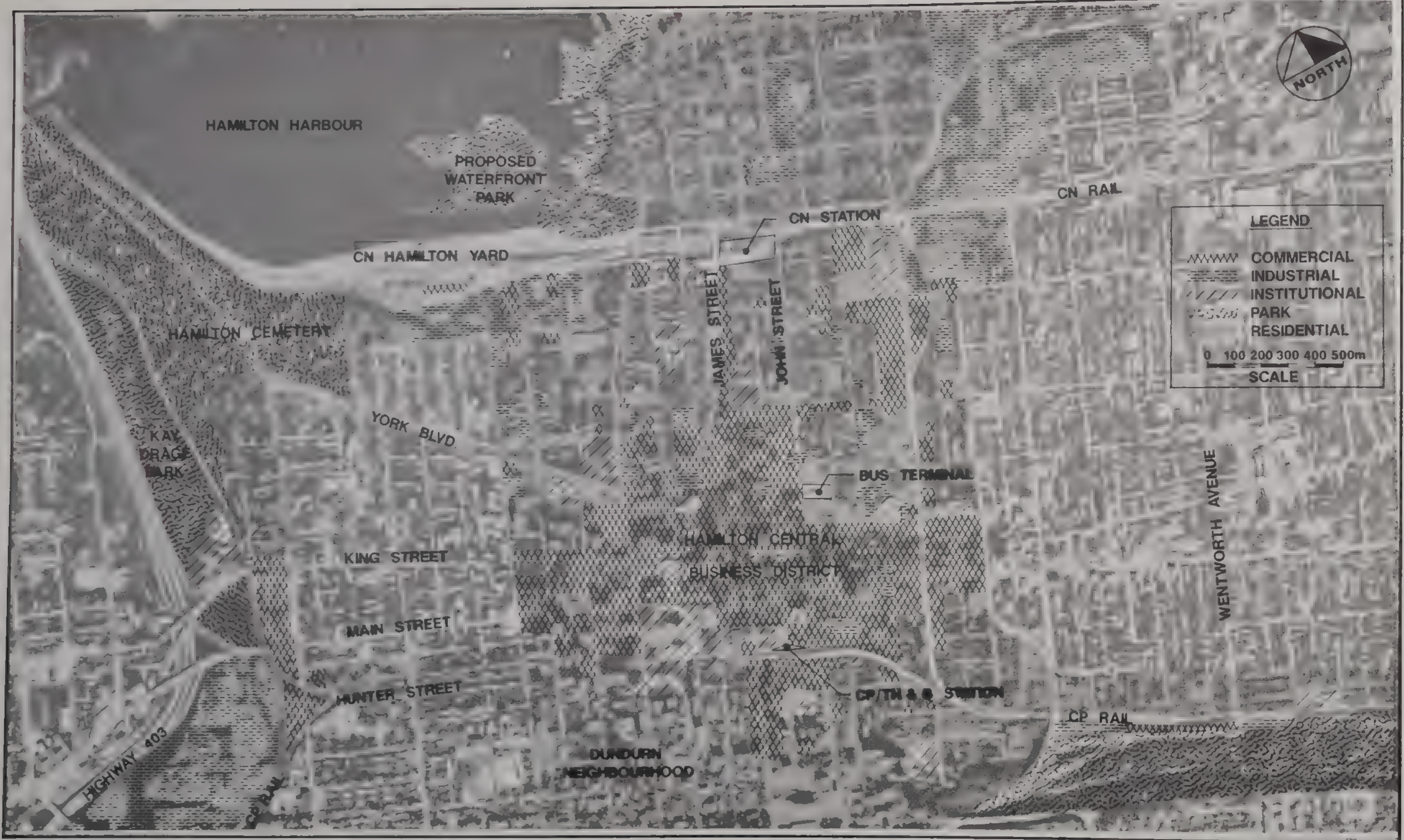
GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

Ministry of Transportation
GO TRANSIT
The Regional Municipality of Hamilton-Wentworth
The Regional Municipality of Halton

LAND USE - HIDDEN VALLEY TO DESJARDINS CANAL

EXHIBIT
5C



EXHIBIT

5D

LAND USE - CENTRAL HAMILTON

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

Ministry of Transportation

GO TRANSIT

The Regional Municipality of Hamilton-Wentworth

The Regional Municipality of Halton

blocks.

The CP/TH&B Station is within 750 metres of all of the above save the Waterfront Park, and is surrounded by a variety of land uses including institutional, office, retail, and high density residential buildings. Development and redevelopment of a number of major properties is underway or is planned, while further opportunities exist on some vacant properties.

The CN Station is surrounded by a stable low to medium-density residential neighbourhood, with little redevelopment pressure evident. Some industrial activities occur in the area while a limited commercial strip on James Street North links it to the downtown core approximately one kilometre away.

The Hamilton Central Area Plan views the downtown core as the commercial heart of the Region, and a high density of development with mixed use residential types is encouraged. Future growth is directed towards the Civic Centre redevelopment zone and vicinity, with heights and densities decreasing with distance from the core.

In Burlington south of the CN corridor a mixture of industrial/ warehouse uses border the route and mature residential areas extend to the waterfront. The wedge of land between Highway 403 and the tracks is either industrial or undeveloped. West of Hidden Valley parkland uses dominate.

iii) Significance and Sensitivity

Major redevelopment of the CN Station area would not be in keeping with the residential character of much of the neighbourhood, and is a sensitive issue to nearby homeowners. The vicinity of the CP/TH&B Station is far less sensitive to change, as it has been undergoing significant redevelopment for the past decade and plans continue to be brought forward for further change. However, the intrusion of Station-related land use changes on the high density and historic residential areas, mainly to the southwest, is an issue of significance to the local residents, as expressed by the Durand Neighbourhood Association. There is no sensitivity to land use changes identified in the Waterdown Road area.

4.3.3 Economic Development Strategies

i) Data Sources

The Hamilton-Wentworth regional economic development strategy report (Building on Strength-Realizing Opportunity; June 1986) is the primary source for this Section, supplemented by the (Cresap Barnard Economic Assessment Report for the project (Appendix C).

ii) General Description

Hamilton-Wentworth's economic development strategy has a number of goals:

- Target high growth industries in the service sector.
- Target specific manufacturing industries that have high growth potential.

- Retain existing industry by improving infrastructure, assisting firms with expansions, and ensuring that strategically located sites are available for relocations within the Region.
- Attract people to live and work in the Region by means of an extensive marketing campaign and increased levels of public investment in facilities and amenities that enhance the quality of life in the Region.
- Establish and fund a Hamilton-Wentworth Small Business Centre.
- Promote Hamilton-Wentworth as the regional centre for southwestern Ontario.

The Strategy emphasizes that better highway and commuter transit connections would:

- Bring Hamilton-Wentworth within the Toronto commuter-shed, (thereby) attracting people and businesses to the Region.
- Expand the sphere of influence of Hamilton-Wentworth as a Regional Centre.

iii) Significance and Sensitivity

The improvement of Hamilton-Toronto commuter transit links plays a significant role in the Regional economic development strategy. However, the strategy has many aspects that are entirely independent from GO Train service, so that, taken as a whole, the economic development of the Hamilton-Wentworth region is not considered sensitive to the specific shape which improvements may take.

4.4 Transportation

i) Data Sources

Meetings with transportation facility owners, examination of plans, and general knowledge of the area and its proposals form the basis for information in this Section. Notes on the significance and sensitivity of the existing conditions to change are incorporated in each subsection.

ii) General Description

a) Railways

Both CN Rail and CP Rail operate in the study area. Exhibit 1 shows the major track corridors and facilities.

1) CN Rail

CN Rail has its Oakville Subdivision extending from Toronto west through Burlington and around Hamilton Harbour to head down the Niagara peninsula towards St. Catharines. A rail yard in the Aldershot area of Burlington, the main Hamilton Yard on the bayfront, numerous yards and spurs serving Hamilton's industrial area to the east, and the Hagersville Subdivision running down the center of Ferguson Avenue and up the Niagara Escarpment are all CN facilities in the study area. CN is pursuing the abandonment of the Ferguson Avenue link, and it has not been used in a number of years.

The Oakville Subdivision in Burlington has two main line tracks and the portion between the Halton Subdivision junction at Brant Street and the Dundas Subdivision at Bayview Junction is the busiest freight link in the CN National system. A total of more than seventy trains pass over the tracks daily, about half of which are scheduled VIA, Amtrak, and GO passenger trains. With such demands for scheduled and non-scheduled movements, CN has indicated that the two tracks have virtually no capacity for more trains. The structures on the line are built for two, three, four, or six tracks, and CN Rail is currently studying the ultimate track requirements in the corridor. Long term protection for six main line tracks is seen as providing one way tracks in each direction dedicated to passenger, through freight, and slow freight moves respectively.

The Hamilton Yard on the waterfront is CN's major activity centre in the area, and due to its layout on either side of the main lines, expansion of the main line corridor would likely entail a major reconstruction of yard facilities. The proposed Waterfront Park and Perimeter Industrial Road place significant constraints on the ability to reconfigure the Yard.

There are two train stations on the CN line. The CN Hamilton Station serves Niagara - and USA - bound passenger trains and a limited number of GO Trains. The VIA Rail Station west of Brant Street in Burlington is planned to be removed from service in 1988 with its operations shifting to an expanded Burlington Fairview GO Station nearby.

2) CP Rail

CP Rail also serves the Hamilton area through its Waterford and Welland Subdivisions, Toronto Connection, Aberdeen and Kinnear Yards, and Belt Line. All except the Toronto Connection were owned and operated by the Toronto, Hamilton and Buffalo Railway (TH&B) until the 1970's, when it was bought and operated as a subsidiary by CP Rail. The TH&B has since been incorporated into CP Rail and no longer exists as a corporate entity.

The Waterford Subdivision, beginning at the CP/TH&B Station and extending west past Aberdeen Yard to Dundas and beyond, and the Welland Subdivision, which gradually climbs the escarpment in Stoney Creek and leads down the Niagara Peninsula together form the core CP route in the area. It is generally a two track line, with the exception of a single track between the CP/TH&B Station on Hunter Street and the Poulette Street Junction near Aberdeen Yard. Two north-south links to the CN corridor and bayfront industrial area are fundamental to CP operations in Hamilton: the Belt line near Gage Avenue runs at grade through a mixed-use area and crosses numerous major east-west roadways but allows engines from Aberdeen Yard to work on CP facilities in the industrial area north of the CN corridor; and the Toronto Connection links the Main Street Junction with Hamilton Junction on the CN main line, providing direct access to Toronto through an operating agreement with CN Rail. Another CP line at Bayview

Junction splits from the CN corridor to head towards Guelph.

No passenger trains currently use the CP facilities, although they once served a very busy Toronto-Buffalo route (hence the Toronto, Hamilton and Buffalo Railway), and the CP/TH&B Station (including the head office of the TH&B Railway) has lapsed into disuse.

No plans for expansion or change of CP facilities are in place, but the introduction of a significant number of new trains on the line would cause a major congestion/delay problem to both existing and new trains in areas such as the Hunter Street Tunnel and the Toronto Connection. CP does plan the introduction of a number of new freight trains over the next decade, reducing further the ability to expand passenger service in the corridor without expanding track capacity.

3) GO Transit

The GO Train system is a commuter rail network providing either rush hour or all day service on CP, CN, or dedicated GO tracks in seven corridors radiating from Union Station in downtown Toronto. Exhibit 7 shows that Hamilton is the terminus of the west leg of the Lakeshore line, anchored at the east by Pickering. Easterly expansion to Whitby is projected to open on December 5, 1988, and further expansion to Oshawa is being studied. Milton, Georgetown, Bradford, Richmond Hill, and Stouffville are the other GO Train terminals, and all are served by a limited number of one way peak period trains for commuting purposes. The Lakeshore line features train service throughout the day between Oakville and Pickering, with only three GO Trains eastbound in the morning peak period and three trains westbound in the afternoon peak serving passengers in Oakville West, Burlington, and Hamilton. A new GO station at Appleby line in Burlington opened in September, 1988. The extension of train service to the Burlington Station is planned for 1992. GO Train service is supplemented by parallel GO Bus service where limited train schedules exist (see Section 4.4.3(a)).

b) Roadways

Provincial, Regional, and City owned roadways exist in the study area, as do privately owned roads. Provincial Highway 403 is the major intercity artery in the area, linking Hamilton to Burlington and the Queen Elizabeth Way to Toronto. The Highway is a fully divided controlled access high standard six lane freeway, with protection for widening to eight lanes in the long term. Interchanges at Highway 6, York Boulevard, King Street and Main Street and a partial interchange with Waterdown Road serve the local municipalities. An interchange at Brant Street in Burlington is planned for construction by the early 1990's. Conceptual plans exist for the ultimate completion of the Waterdown Road interchange, but neither this nor the widening to 8 lanes is currently scheduled or have funds assigned to it.

A major expansion has just been completed on the Queen Elizabeth

Way between Burlington and Stoney Creek with the twinning of the Burlington Bay Skyway and reconstruction of all the associated interchanges and service roads. The extension of Highway 403 northward from its interchange with the Q.E.W. to link with an existing segment at Winston Churchill Boulevard in Mississauga is planned. Severe rush hour congestion often occurs on the Q.E.W. farther to the east in Oakville, Mississauga, and Toronto (see Exhibit 2). Although beyond the study area, this congestion affects the travel time and patterns of Hamilton-Toronto commuters and the ability of GO Buses to function on schedule in the corridor.

Other Provincial Highways in the study area (Highways 2, 6, and 8) function as urban or rural arterial roadways.

The Regional road network in the study area comprises most of the major arterials not designated Provincial Highways. The Regional Municipality of Hamilton-Wentworth proposes the construction of a major new link known as the Perimeter Industrial Road in the CN corridor as shown in Exhibit 6. This is currently under study and is planned to be a high standard grade-separated arterial extension of Burlington Street in the north end, linking Hamilton's industrial area with a new interchange with Highway 403 in the vicinity of Desjardins Canal. Elevated options are being considered for the road in the Hamilton Yard area to avoid affecting the CN Rail operations and the necessity otherwise to further fill in the Harbour.

A major Regional arterial/freeway link is planned for the Red Hill Creek Valley and on Hamilton Mountain, but is well outside the study area.

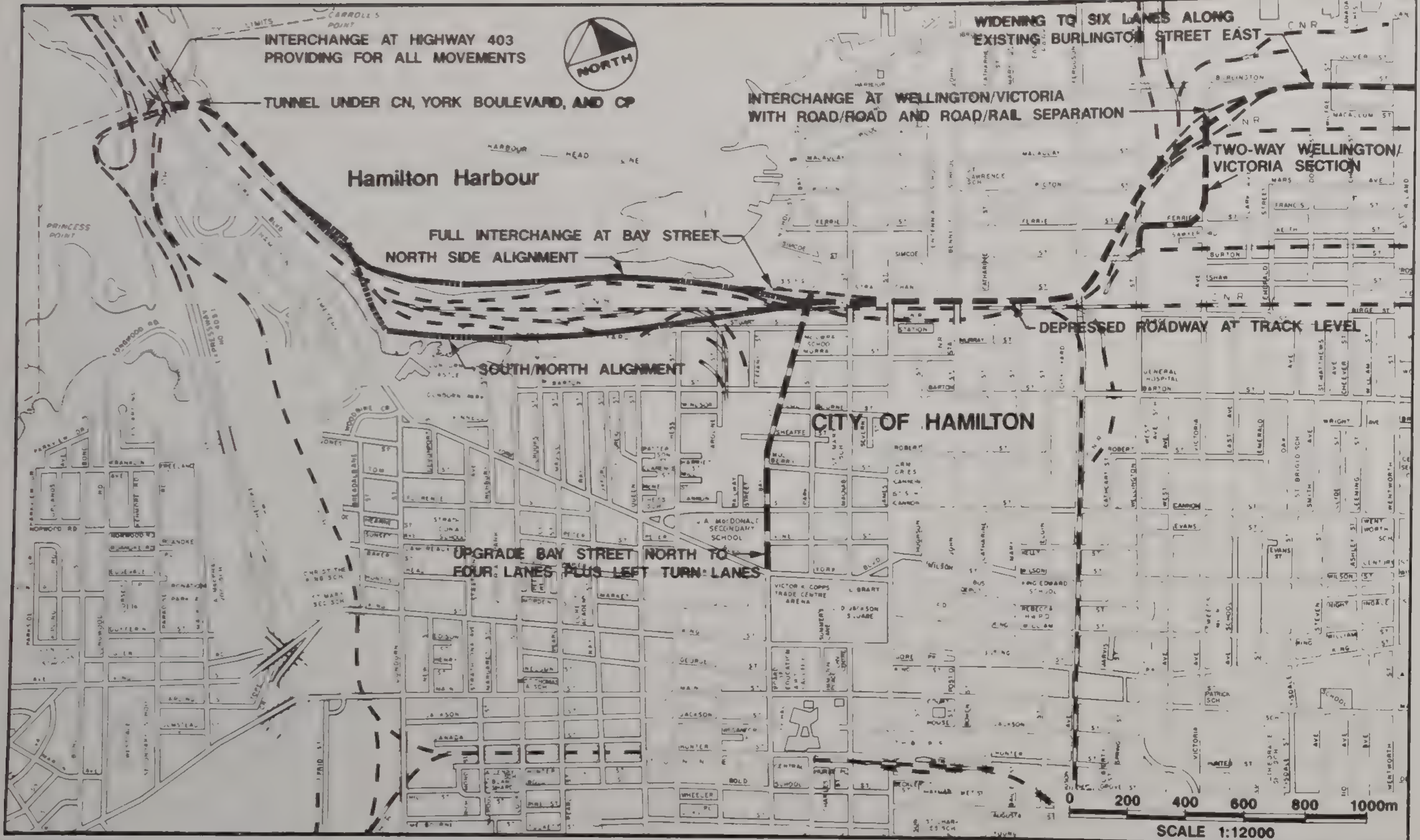
The municipal street system in Burlington and Hamilton is mature within the study area, with no significant changes planned.

Should GO Train service be expanded along existing rail corridors, significant roadway issues would be: the protection and provision of appropriate interchange facilities at Highway 403 and Waterdown Road (if a GO Station were located there); the ability to provide extra GO tracks in the Hamilton Yard in the context of the Perimeter Road needs in the area; minimizing disruption due to reconstruction of road/rail crossings; and ensuring that Station-generated traffic is capable of being handled by the adjacent street system.

c) Transit Systems

The study area is fully served by public transit systems, which include:

- GO Transit (commuter bus and rail);
- VIA Rail (intercity rail);
- Hamilton Street Railway (local bus);
- Burlington transit (local bus);
- Canada Coach Lines (regional bus); and
- various small regional bus systems.


INTERCHANGE AT HIGHWAY 403 PROVIDING FOR ALL MOVEMENTS
NORTH
TUNNEL UNDER CN, YORK BOULEVARD, AND CP
Hamilton Harbour
PRINCESS POINT
FULL INTERCHANGE AT BAY STREET
NORTH SIDE ALIGNMENT
SOUTH/NORTH ALIGNMENT
CITY OF HAMILTON
UPGRADE BAY STREET NORTH TO FOUR LANES PLUS LEFT TURN LANES
WIDENING TO SIX LANES ALONG EXISTING BURLINGTON STREET EAST
INTERCHANGE AT WELLINGTON/VICTORIA WITH ROAD/ROAD AND ROAD/RAIL SEPARATION
TWO-WAY WELLINGTON/VICTORIA SECTION
DEPRESSED ROADWAY AT TRACK LEVEL
CNR
0
200
400
600
800
1000m
SCALE 1:12000

EXHIBIT

6

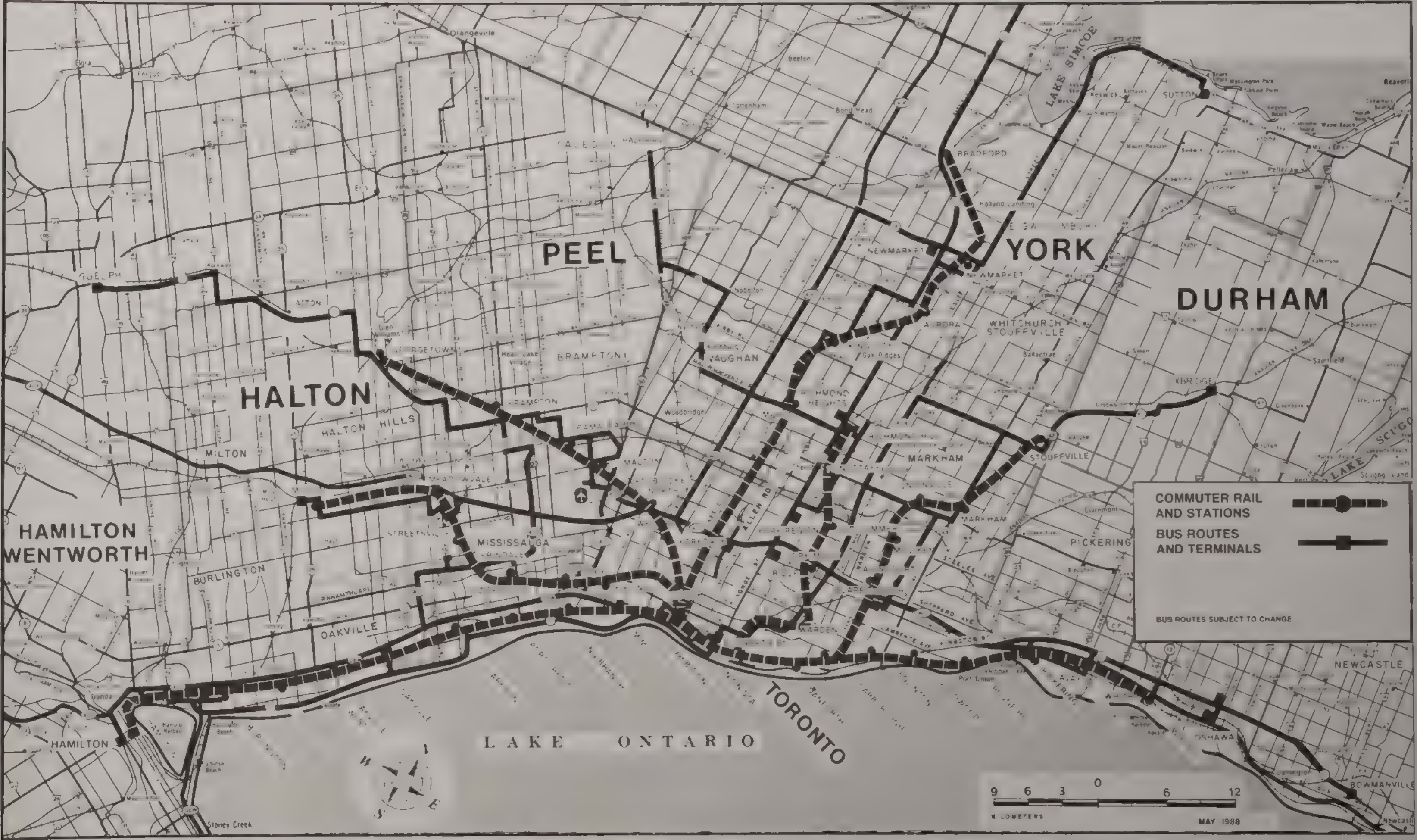
PROPOSED HAMILTON PERIMETER ROAD

CONCEPT APPROVED BY REGIONAL COUNCIL JULY 19, 1986
(ALIGNMENT OF ROAD IN CN HAMILTON YARD AREA TO BE DETERMINED)

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

Ministry of Transportation
GO TRANSIT
THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH
THE REGIONAL MUNICIPALITY OF HALTON



GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

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THE REGIONAL MUNICIPALITY OF HALTON

GO TRANSIT SYSTEM MAP

EXHIBIT
7

1) GO Transit

Government of Ontario Transit is a Toronto-based commuter network designed to provide an alternative to automobile commuting, as shown on Exhibit 7. The Hamilton GO Train service is described in Section 4.4.2, and is supplemented by three GO Bus routes focused on the Hamilton Bus Terminal on Rebecca Street in the downtown core. Current GO ridership figures are provided in Appendix H. The Citylink Express Bus travels direct non-stop between central Hamilton and downtown Toronto via Highway 403 and the Q.E.W. It makes approximately 44 trips per day each way and carries about 1400 passengers each way, or 63 per cent of the total Hamilton-Toronto transit passengers.

Since full GO Train service terminates at Oakville those trains that do not continue to Hamilton are met by the GO Train Meet bus, which makes a number of stops in Burlington and Hamilton and acts as a feeder service to the train. Approximately 26 Train Meet buses carry in the order of 400 passengers each way daily. It may be noted that the three GO Trains from Hamilton to Toronto each weekday morning leave with approximately 340 passengers, about 80 percent of whom return by train that evening.

The GO Lakeshore bus service follows York Boulevard, Plains Road, and Lakeshore Road all the way to Toronto from Hamilton and serves as a local bus link between the various separate municipal transit systems in the corridor. About 240 passengers use the system in each direction between Hamilton and Burlington each day, but it does not serve a long-distance commuting purpose.

The Hamilton Bus Terminal is operated by GO Transit on a long-term lease from the Hamilton-Wentworth Region, but the facility is inadequate for current needs. Although plans have been available for a number of years for a new terminal, implementation has been delayed, first for the GO-ALRT study, and now for the current GO Train Study, so as to not preclude the integration of interregional bus and train service at a single new station.

Passenger demand in the Hamilton-Toronto corridor is projected to double by 2011, but increasing road congestion reduces the ability of the Express Bus service to maintain its schedule and running time in peak periods. Whereas standard running time is 55 minutes, a 75 to 90 minute trip is the norm during rush hours. Meanwhile the GO Train service from Hamilton is not well patronized due to its extremely limited schedule and inconvenient Hamilton terminus, a kilometre away from and uncoordinated with the Bus terminal - since no link exists between the two, a passenger who drives to the GO Train Station and later returns by GO Bus is a lengthy walk from his vehicle.

The GO Train Station in Burlington currently suffers from excess parking demand, but the opening of the Appleby Line Station to the east and the possible expansion of parking facilities at the

Station are anticipated to alleviate the problem prior to the expansion of GO Train service.

2) VIA Rail

The national intercity rail passenger network has stations in Burlington west of Brant Street and in Hamilton at the CN Station, but serves a very small demand, as most trips in the area are served by GO Transit to Toronto and other interregional bus carriers. The Burlington Station offers frequent service on the Toronto-Windsor main line, but its functions are to be transferred to the nearby Burlington GO Station in 1988 and the station closed. Hamilton VIA service at the CN Station is limited to three daily trains each way on the Toronto-Niagara Falls route, connecting to American destinations. There is no VIA service between Hamilton and southwestern Ontario.

VIA Rail is a train operator only and owns both the Burlington and Hamilton Stations but does not own or control the tracks on which its trains run. In this respect it is similar to the GO Train system and, as with GO its schedules are worked out in cooperation with CP Rail and CN Rail so that no conflicts occur. Expansion of GO Train service is thus constrained by the demands of regularly scheduled VIA trains in the same corridors. As well, an expanded GO presence at the CN Station would involve VIA as the facility's owners. VIA would continue to serve Toronto and the Niagara peninsula from the CN corridor even if GO Train service were shifted elsewhere.

3) Hamilton Street Railway

The HSR is the Hamilton-Wentworth public transit system, running 270 buses and trolleys on thirty regular routes, with an annual ridership of almost thirty million passengers.

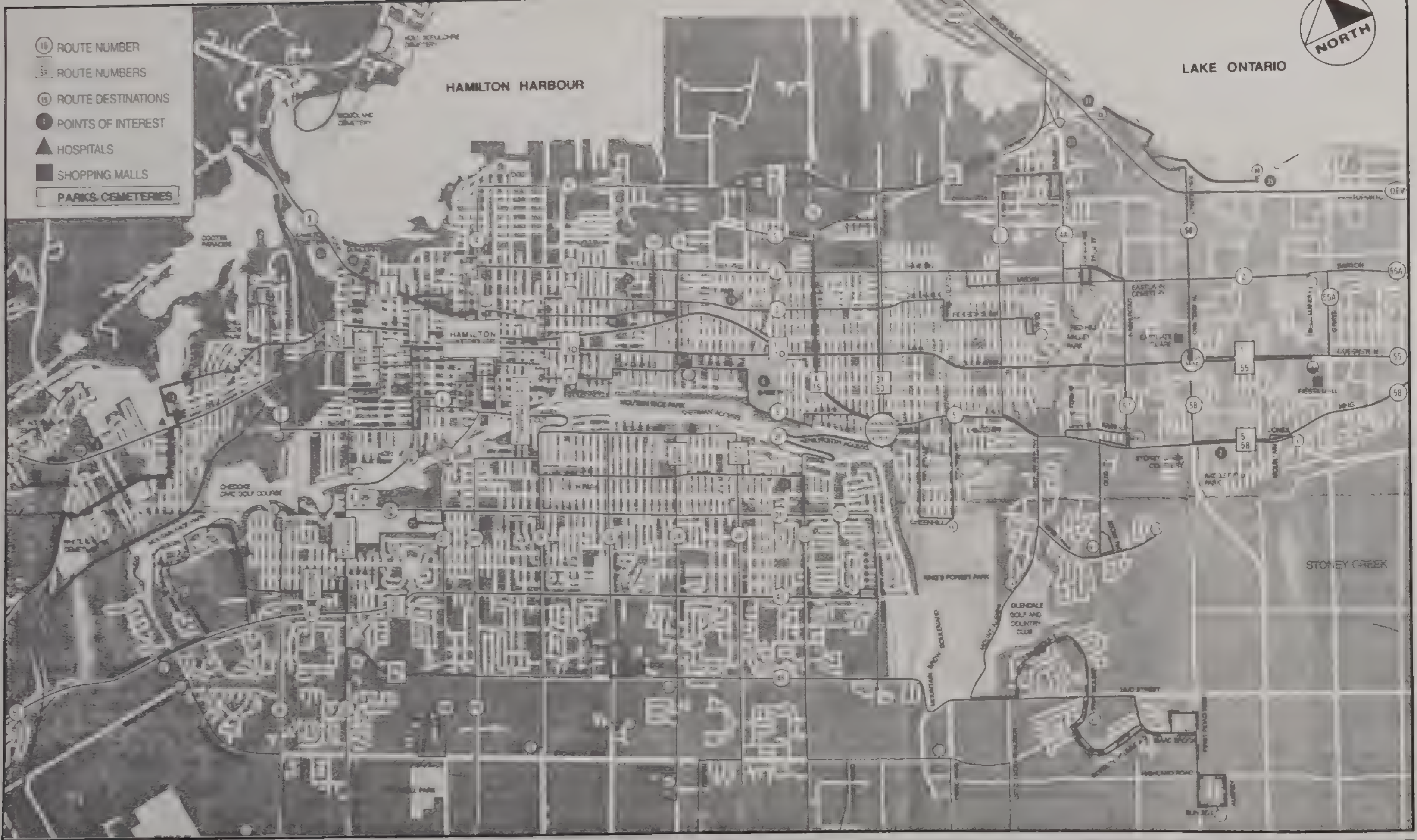
Virtually all of the routes focus on the downtown core, with on-street stops in the area bounded by King Street, MacNab Street, Main Street, and John Street. Most Hamilton Mountain routes bring residents downtown via John Street and return up James Street, while east-west routes fan out from King and Main Streets. A limited-stop express route travels on King and Main Streets between Dundas and Stoney Creek. Exhibit 8 demonstrates the HSR route system.

Twenty Six HSR routes pass either adjacent to or within two blocks of the CP/TH&B rail station, with only two routes passing near the CN Station in the north end.

The existing GO Bus terminal is within two blocks of the H.S.R. focus, and a significantly greater amount of integration between H.S.R. and intercity bus carriers at a single terminal is a high priority amongst the operators, utilizing the ability of the H.S.R. to serve as a comprehensive feeder system for the interregional carriers.

4) Burlington Transit

Burlington is served by an eight-route local transit service, of



EXHIBIT

8

EXISTING H.S.R. BUS ROUTES

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

Ministry of Transportation
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The Regional Municipality of Halton

which two serve the Burlington GO Train Station. A single east-west route on and south of Plains Road links West Burlington with the downtown Bus Terminal. A new downtown terminal is currently under construction. Free transfers are available between Burlington Transit and the GO Transit system.

5) Canada Coach Lines

Canada Coach Lines is the interregional bus subsidiary of the HSR, linking Hamilton with Buffalo, the Niagara peninsula, Kitchener-Waterloo, Guelph, and Brantford on a frequent schedule. CCL shares the Hamilton Bus Terminal with GO Transit buses and the integration of service with the HSR feeder routes is desired.

6) Other Carriers

Bus operators other than those mentioned in the previous sections serve some smaller markets from the Hamilton Bus Terminal. Farr's Coach Lines runs buses between Dunnville, Welland, and Hamilton; Trentway-Wagar links Hamilton with Lester B. Pearson International Airport in Mississauga; United Trails buses use Highway 6 to serve Tillsonburg; and Greyhound coaches provide intercity links to London and Detroit.

Amtrak, the American national passenger rail service, stops at the Burlington and Dundas VIA Stations on its single daily Toronto-Chicago run (although it does not stop on the return trip), and at the Burlington and Hamilton CN Stations on the daily Toronto-New York trip.

The needs of the bus operators would be considered in any contemplation of a new Bus Terminal in Hamilton. The rerouting of Amtrak service between Chicago and Toronto to the northern CN corridor through Guelph and Kitchener is under study by VIA and Amtrak. Amtrak will shift with VIA to the Burlington GO Station when the Burlington VIA Station is retired. However, the Toronto-New York Amtrak service will continue to stop at the Hamilton CN Station in any case.

iii) Significance and Sensitivity

Details of the significant issues regarding existing transportation facilities are included in the general description, and may be summarized as follows:

- the CN Rail facilities in Burlington are operating at capacity;
- provision of additional main line capacity in the Hamilton Yard area would have a significant cost and suffers from severe constraints;
- the Hunter Street Tunnel on the CP line in Hamilton restricts expansion potential in that corridor;
- introduction of a significant number of new trains to either the CN or CP lines will cause a major congestion/delay problem unless track capacity is increased;
- GO Train service from Hamilton is limited in extent and poorly patronized;

- GO Bus service and general commuter traffic is hampered by congested highway conditions between Burlington and Toronto;
- improvement of interchange facilities at Waterdown Road/Highway 403 if necessary and protection for the needs of the proposed Perimeter Industrial Road are significant issues;
- station-generated traffic may overload local streets; and
- integration of intercity bus, HSR, and commuter rail services at a single Hamilton terminus is strongly desired by all parties.

4.5 Utilities

i) Data Sources

Each of the utility owners in the study area was contacted directly and provided comments or plans of all utilities in the general vicinity of the CN and CP rail lines. Field observations and plans were used to supplement the information provided.

ii) General Description

As a fully developed urban and a major intercity transportation corridor, the study area has numerous utilities present. However, the fact that the rail corridors predated virtually all of the utilities has meant that any utility crossings of the rail lines have been well-planned and capacity for expansion has been provided. The major exception would be the CNCP Telecommunications cables, which run within the rail rights of way and in most instances would require relocation upon rail widening.

No other major utility-related impacts have been noted in the course of the study. Table 14 lists the utility crossings of the CN and CP Rail lines in the study area. The location of each crossing may be found on the 1:2000 plans in Section 6.2.

iii) Significance and Sensitivity

During the detail design stages, contact with each utility owner should be maintained to ensure that their concerns are addressed, should any be expressed, and actual crossing locations should be determined in the field prior to any construction.

4.6 Summary Of Environmentally Significant Areas/Issues In The Study Area

Table 15 summarizes those areas or issues that have been identified as "Environmentally Significant" in the context of the Environmental Assessment process for this Study.

TABLE 14: UTILITIES CROSSING RAIL CORRIDORS IN STUDY AREA

STATION *	UTILITY	DESCRIPTION
1+746	City of Burlington	900 mm Water
1+764	City of Burlington	300 mm Sanitary Sewer
1+772	City of Burlington	350 mm Water
1+776	Burlington Hydro	Aerial Power Cables
2+018		Gas
2+438	Burlington Hydro	Aerial Power Cables
2+456	City of Burlington	750 mm Sanitary Sewer
2+532	Burlington Hydro	2 - 230kv Aerial Power Cables
3+516	Burlington Hydro	Aerial Power Cables
3+982		Gas
3+986	City of Burlington	Water
3+990	City of Burlington	525 mm Sanitary Sewer
3+994	City of Burlington	350 mm Water
3+996	Burlington Hydro	Aerial Power Cables
5+872	City of Burlington	450 mm Sanitary Sewer
6+272	City of Burlington	600 mm Water
6+282		Gas
6+826	Burlington Hydro	Aerial Power Cables
8+687	Sun Canada	150 mm dia. high pressure oil pipeline
8+691	Imperial Oil	2x150 mm dia. gas pipelines 1.5 M apart
8+920	Burlington Hydro	Aerial Power Cables
9+316		Gas
9+351	Burlington Hydro	Aerial Power Cables
51+144	Union Gas	Gas
52+490-520		2000 mm Sanitary Sewer - abandoned
52+762		600 mm Sanitary Sewer - abandoned
52+766	Union Gas	100 mm gas pipeline
52+768	City of Hamilton	50 mm Water
52+772	City of Hamilton	1500 mm Sanitary Sewer
53+370	City of Hamilton	300 mm Sanitary Sewer
53+634	Bell Canada	Overhead Cables
53+637	City of Hamilton	2100 mm x 1800 mm Sanitary Sewer
53+772	Bell Canada	3 ducts
53+778	City of Hamilton	350 mm Sanitary Sewer
53+783	City of Hamilton	500 mm Water
54+046	City of Hamilton	1500 Storm Sewer
54+180		50 mm Gas
54+182	Bell Canada	
54+186	City of Hamilton	300 mm Water
54+188	City of Hamilton	375 mm Sanitary Sewer
54+298		150 mm Gas
54+302	City of Hamilton	300 mm Sanitary Sewer
54+302-520	City of Hamilton	375 mm Storm Sewer
54+304	City of Hamilton	300 mm Storm Sewer
54+356		Gas
54+376-520	City of Hamilton	375 mm Storm Sewer
54+446	City of Hamilton	150 mm Water
54+451		Gas
54+562		Gas
54+606	Hamilton Hydro	Hydro
54+607	Bell Canada	Telephone
54+614	City of Hamilton	300 mm Sanitary Sewer
54+616	City of Hamilton	150 mm Water
54+617		Gas
54+770	Bell Canada	5 ducts
54+830	City of Hamilton	300 mm Sanitary Sewer
54+887	City of Hamilton	Sanitary Sewer
54+889	Bell Canada	20 ducts inside 600mm steel liner
54+892	City of Hamilton	300 mm Sanitary Sewer

* East End of Burlington GO Station platform is Station 1+100 metres. See 1:2000 scale Exhibits in Section 6.2 for location plans.

Table 15: Summary of Environmentally Significant Areas/Issues

Section	Identified Environmentally Significant Area/Issue	Concerned Agency/Group
4.1.2	Physiography and Soils - erosion of steep slopes and ravine walls due to construction - effect of soil erosion on R.B.G. and watercourses - erosion due to release of ground water as a result of soil disturbance - disturbance of fill areas Mineral Resource Protection Area No.1 for Queenston Shale protection	M.N.R. M.N.R. R.B.G M.O.E. M.O.E. M.N.R., Halton Region
4.1.3	Vegetation - Vegetation Units 23, 24, 25, 29, 30, 33, 35, 36, 50, 58, 59, 60, 72, 77 - 82 contain plant species of regional, provincial, and/or national significance	Halton, Hamilton - Wentworth Regions, M.O.E., Halton E.E.A.C.
4.1.4	Water Resources and Fisheries - sedimentation of major streams during construction possible fill in Sunfish Pond, Old Cootes Paradise Outlet, Hamilton Harbour - destruction of shoreline fish habitat in above areas due to fill	Hamilton, Halton Conservation Authorities M.N.R.
4.1.5	Wildlife - preservation of wildlife habitat along streams and ravines and in the Sassafras Woods - preservation of shoreline habitat along Sunfish Pond, Hamilton Harbour Desjardins Canal	Halton Region Hamilton - Wentworth Region
4.1.6	Environmentally Sensitive Areas - Halton Region E.S.A. 4 (Sassafras Woods) - Halton Region E.S.A. 3 (Grindstone Creek Valley) - Hamilton - Wentworth Region E.S.A. 16 (R.B.G. - Cootes Paradise)	Halton Region Halton Region Hamilton - Wentworth Region
4.2.1	Communities - noise due to rail activities - additional traffic due to Stations - safety adjacent to rail corridor - parking in neighbourhoods near CP/TH&B Station - vibration due to train passage - air pollution from locomotives - disruption to community during construction, especially re: Hunter Street Tunnel - potential for drop in property values	Dover, Hunter Street/Canada Street Communities Dover, Durand Communities Dover Community Durand, Macnab Street South communities Hunter Street residents Residents near either end of Hunter Street Tunnel Durand neighbourhood abutting landowners
4.2.2	Heritage Resources - original railway structures (from 1890's) may be removed/reconstructed - VIA Burlington, CP/TH&B, and CN Hamilton Stations have architectural/historic merit and are sensitive to change - remnants of mass graves and Burlington Heights ramparts may be uncovered with railway expansion - scenic interest in R.B.G./Harbour area sensitive to railway expansion	M.C.C Hamilton LACAC, Burlington LACAC, M.C.C. M.C.C., R.B.G. R.B.G.
4.3.2	Land Use - major redevelopment in area of CN Station not in keeping with local character - land use changes due to CP/TH&B Station - related activity may impact residential areas nearby	Hamilton Official Plan, local residents Durand Neighbourhood Association
4.3.3	Economic Development Strategies - improvements in Hamilton-Toronto commuter links recommended as part of Hamilton-Wentworth regional economic development strategy	Hamilton-Wentworth Region
4.4.1	Railways - protect integrity of existing and proposed train service schedules - minimize conflicts between GO and other trains - protect for ultimate track requirements in all infrastructure	CN Rail, CP Rail, VIA Rail, GO Transit CN Rail, CP Rail, GO Transit CN Rail, CP Rail
4.4.2	Roadways - protect for ultimate interchange requirements at Waterdown Road/Highway 403 - provide good level of service at Waterdown Road/Highway 403 interchange - allow construction of the Perimeter Industrial Road in the CN corridor - minimize disruption during construction, especially at crossings - ensure local street system near stations is capable of handling generated traffic	M.T.O. M.T.O. Hamilton-Wentworth Region Cities of Hamilton and Burlington; Regions of Halton and Hamilton-Wentworth City of Hamilton, Hamilton-Wentworth Region.
4.4.3	Transit Systems - integrate GO Bus and GO Train facilities - provide adequate Hamilton Bus Terminal facilities for all users, including forecast growth - provide adequate parking at appropriate locations for transit users	GO Transit Bus operators GO Transit, City of Hamilton, City of Burlington, transit users
4.5	Utilities - protect all utility crossings from disruption during construction - move or reinstate all utilities in locations acceptable to owners if necessary due to track expansion	Utility owners

Section 5

Identification and Analysis of Alternatives

5. IDENTIFICATION AND ANALYSIS OF ALTERNATIVES

5.1 Introduction

This section describes the identification of alternatives and the analysis process followed in determining the recommendations for expansion of GO Train service in the Burlington to Hamilton corridor.

The sequence of analysis activities and the involvement of various agencies in the analytical process is described in Section 3.2.

Exhibit 9 summarizes the analysis of alternatives, each step of which is documented in the following Section. The modal alternatives to the undertaking were subjected to a preliminary screening assessment. Viable alternatives were pursued further and in greater detail, leading to the identification of a preliminary set of technical recommendations. These recommendations were reviewed and refined to produce the final technical recommendations documented in Section 6 of this report.

5.2 Identification of Alternatives to the Undertaking

A number of alternative modes of transportation were identified as possible solutions to transportation problems in the study area. However, it must be noted that the objectives of the study as documented in Section 2.3 are to consider the expansion of GO Train service.

5.2.1 Light Rail Transit

Due to the extent of work on the recent GO-ALRT study, the most prominent alternative to the undertaking is Light Rail Transit, whereby an ALRT or streetcar link would offer full service between central Hamilton and the Burlington GO Rail station, connecting with full GO Rail service between Burlington and Toronto. Dozens of alternative alignment segments were analyzed in detail during the GO-ALRT study.

5.2.2 Bus

A bus link between central Hamilton and the Burlington full service GO Rail station could be developed on bus-only roadways, either using dedicated bus lanes on existing or widened roads or on a separate busway. Bus service could also be expanded on existing roads and routes.

5.2.3 Roadways

Provision of additional roadway capacity between Hamilton and Burlington in the form of widened or new roadways, or an increase in vehicle occupancy rates may be considered as means of improving Hamilton-Toronto commuter service. Although these alternatives are assumed to be carried out independent of and parallel with transit improvements in any case, they have been assessed as alternatives to the expansion of the GO train service.

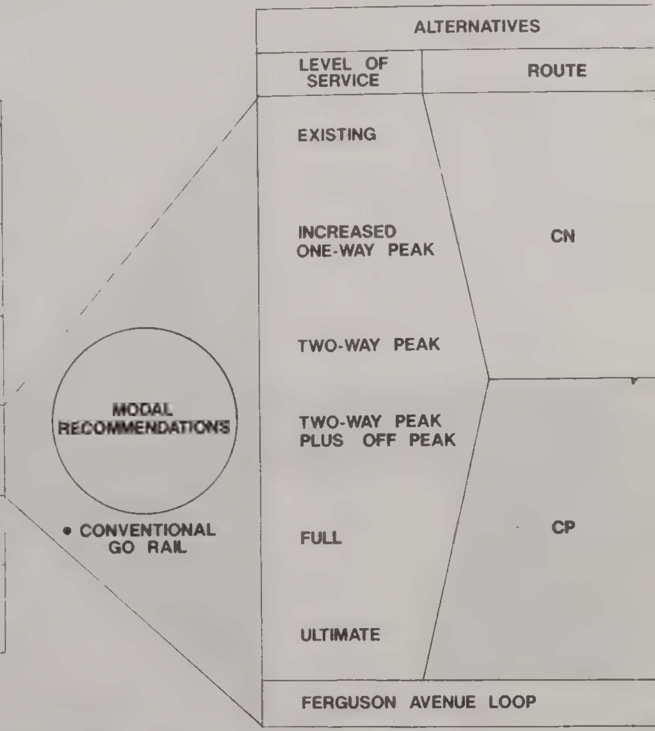
ANALYSIS STAGE: ANALYSIS OF ALTERNATIVES TO THE UNDERTAKING

SUMMARY OF ANALYSIS

FACTORS

ALTERNATIVE	ECONOMIC BENEFITS	COST	LAND USE IMPACT	TRANS. NETWORK	FLEXIBILITY	SOCIAL IMPACT	NAT ENVIRO. IMPACT	DEMAND	LEVEL OF SERVICE	OPERATION	OVERALL SUMMARY
LIGHT RAIL LINK	◒	○	◒	◒	◒	○	○	◒	◒	◒	L.R.T rejected due to high cost of entire network needed
BUS LINK	○	◒	◒	◒	●	◒	◒	○	◒	●	useful mode but constrained by roadway traffic in peak periods
ROADWAYS	◒	◒	◒	○	○	◒	○	○	○	◒	roadway problems are outside study area
CONVENTIONAL GO RAIL	●	◒	○	●	◒	●	◒	●	●	●	greatest ratio of benefits to cost
OTHERS	○	○	●	○	○	◒	●	○	○	○	impractical uneconomi or both
BASE CASE	○	●	●	○	○	◒	●	◒	○	○	does not address problems or improve situation

● = Most Preferred
◒ ↓
○ = Least Preferred



MODAL RECOMMENDATIONS

- CONVENTIONAL GO RAIL

ALTERNATIVES

LEVEL OF SERVICE	ROUTE
EXISTING INCREASED ONE-WAY PEAK TWO-WAY PEAK	CN
TWO-WAY PEAK PLUS OFF PEAK FULL ULTIMATE	CP
FERGUSON AVENUE LOOP	

REVIEW PROCESS: FIRST ROUND OF REVIEW JUNE 1987

REPORT SECTION	5.2	5.3.1, 5.3.2	5.3.3	5.4.2	5.4.1

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

Ministry of Transportation — GO TRANSIT — THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH — THE REGIONAL MUNICIPALITY OF HALTON

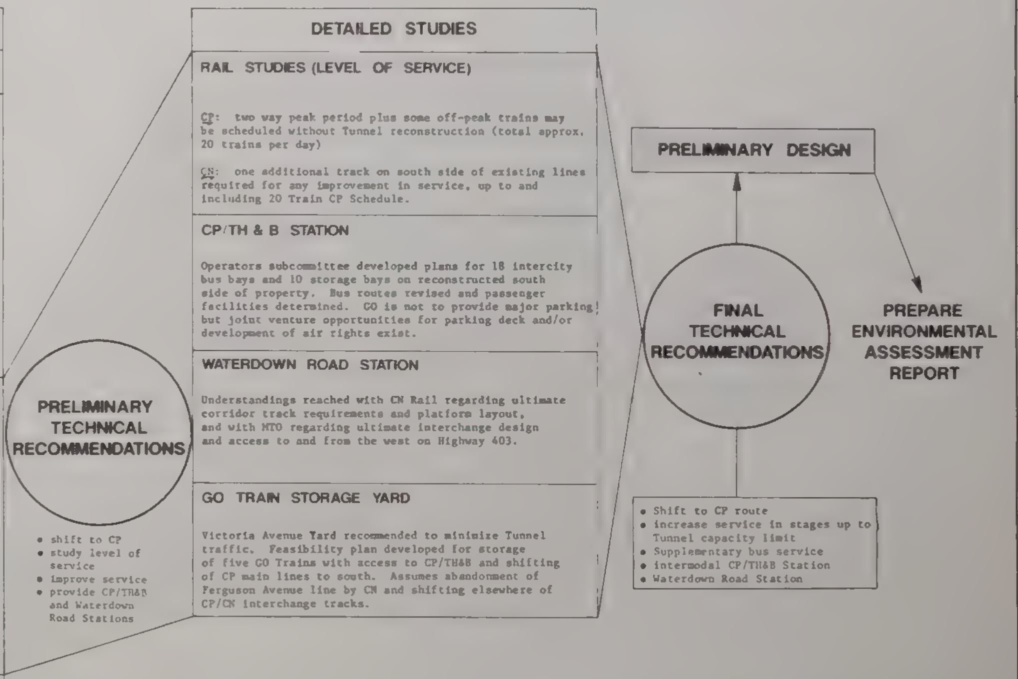
SUMMARY OF ANALYSIS OF ALTERNATIVES

ANALYSIS OF METHODS OF CARRYING OUT THE UNDERTAKING	REFINEMENT OF TECHNICAL RECOMMENDATIONS	DOCUMENTATION

ANALYSIS FACTORS

TRANSPORTATION SERVICE	ECONOMIC EFFECTS	CONSTRUCTION COST	SOCIAL EFFECTS	NATURAL ENVIRONMENT EFFECTS
Station location far from HSR and bus services but intermodal development possible. Does not serve majority of demand either into or out of Hamilton.	Due to distance of terminus from city centre and lack of development potential near Station, economic impact negligible for less than full service. Commercial potential 10Z of CP; employment potential 40Z of CP.	\$m (1987) estimates for existing: 14 1 way: 55-65 2 way: 63-116 2 way plus: 63-116 full: 96-126 Similar order of magnitude to CP	Noise: increase of less than 2 dBA for full service at Enfield Road. No other areas affected. Vibration: freight trains dominate. Construction: minor impact. Visual Impact: high at RBG if new tracks needed (2 way peak or more). Land use: changes near Station and Waterfront Park may be negative.	Any increase in service implies a new track in RBG area, with impact on ravines and Harbour. Little impact elsewhere unless Hamilton Yard expansion required.
Significant opportunity for integration with HSR. Within walking distance of downtown and apartments. Parking very limited at CP; Waterdown Stn. required. Train service limited by tunnel to 2 way peak plus off peak but bus integration supplements fully and tunnel replaceable when necessary.	Negligible impact at less than two way service. Full service most desirable but no major impact. Significantly better than CN due to proximity to city core and potential for office/commercial development.	\$m (1987) estimates for existing: 26-28 1 way: 58-60 2 way: 58-141 2 way plus: 74-152 full: 152 Similar order of magnitude to CN.	Noise: affects Enfield Road, Hunter Street west of Tunnel and Victoria Ave. Yard, but increase less than 2 dBA for full service Vibration: freight trains dominate. Construction: Significant impact on Hunter Street if Tunnel replaced (full service) Visual Impact: Similar to CN. Land Use: minor impact.	Same as CN in RBC area. Little impact elsewhere.

- Grade separation and operation constraints require costly elevated structures: social impact
- requires improvements in both CN and CP corridors; greater impact than replacing Hunter Street Tunnel
- negligible benefits to users; improves off peak service but every trip becomes longer



PRELIMINARY TECHNICAL RECOMMENDATIONS

- shift to CP
- study level of service
- improve service
- provide CP/TH&B and Waterdown Road Stations

DETAILED STUDIES

RAIL STUDIES (LEVEL OF SERVICE)

CP: two way peak period plus some off-peak trains may be scheduled without Tunnel reconstruction (total approx. 20 trains per day)

CN: one additional track on south side of existing lines required for any improvement in service, up to and including 20 Train CP Schedule.

CP/TH & B STATION

Operators subcommittee developed plans for 18 intercity bus bays and 10 storage bays on reconstructed south side of property. Bus routes revised and passenger facilities determined. GO is not to provide major parking but joint venture opportunities for parking deck and/or development of air rights exist.

WATERDOWN ROAD STATION

Understandings reached with CN Rail regarding ultimate corridor track requirements and platform layout, and with MTO regarding ultimate interchange design and access to and from the west on Highway 403.

GO TRAIN STORAGE YARD

Victoria Avenue Yard recommended to minimize Tunnel traffic. Feasibility plan developed for storage of five GO Trains with access to CP/TH&B and shifting of CP main lines to south. Assumes abandonment of Ferguson Avenue line by CN and shifting elsewhere of CP/CN interchange tracks.

FINAL TECHNICAL RECOMMENDATIONS

- Shift to CP route
- increase service in stages up to Tunnel capacity limit
- Supplementary bus service
- intermodal CP/TH&B Station
- Waterdown Road Station

PRELIMINARY DESIGN

PREPARE ENVIRONMENTAL ASSESSMENT REPORT

					SECOND ROUND OF REVIEW NOVEMBER 1987		THIRD ROUND OF REVIEW JUNE 1988	PRESUBMISSION REVIEW FALL 1988
5.5.1	5.5.2	5.5.3	5.5.4	5.5.5	5.5.6	5.6	5.7	

SUMMARY OF ANALYSIS OF ALTERNATIVES

EXHIBIT

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5.2.4 Conventional Rail (GO Train) Alternatives

The existing GO Train service may be improved by expanding the number of daily trains from the existing three one way peak period trains, by shifting to a different route, by providing improved or better located stations, and/or by integrating rail service with local and interregional bus services. Improved GO Train service would be tied directly to the expanded GO service that is planned to be in place by 1992 between Burlington and Toronto.

5.2.5 Other

Non-conventional modes of commuter transit, including airplane shuttle service, rapid ferry or hydrofoil service, bicycles or walking may be considered as alternatives to the undertaking under the terms of the Environmental Assessment Act.

5.3 Evaluation of Alternatives to the Undertaking

5.3.1 Factors Used in Evaluation of Alternatives to the Undertaking

The identified alternatives were compared against one another using ten factors designed to measure the relative costs, benefits and effects of the schemes. The factors are:

1) Economic Benefits - the positive effect of the alternative on job creation, development demand and economic spinoffs, both in the corridor and the entire region.

2) Costs - the capital and operating cost of the alternative, along with any negative economic effects and associated transportation network requirements. The ability to stage costs is also a consideration.

3) Land Use Impact - the effect of the alternative on existing and potential land uses (both positive and negative) and its compatibility with Official Plans.

4) Operation - the logistics of the operation of the alternative in the context of shared or competing rights-of-way. The ability to control, detour and operate the alternative with minimal impact on or due to other facilities is included.

5) Transportation Network - the effectiveness of the alternative in balancing network demand and capacity, the ability to interface with other modes, and the role of the option within local and regional Transportation Plans.

6) Flexibility - the ability to expand, extend, supplement and stage implementation of alternative to respond to demand and other constraints.

7) Social Impact - the effects of the alternative on the community and the people living or working near the service, including noise, vibration, and visual intrusion as well as community severance and positive social effects.

8) Natural Environmental Impact - the impact of the alternative on the natural environment in areas such as Cootes Paradise, the Royal Botanical Gardens, and the Hamilton Harbour.

9) Demand - the effectiveness of the alternative in creating user demand.

10) Level of Service - the features, user costs, quality and quantity of service offered by the alternative to its users.

5.3.2 Screening Process

The alternatives to the undertaking have been identified and briefly described in Section 5.2.1. The Base Case (existing service), Light Rail Link, Bus Link, Roadway, and Other Alternatives were assessed along with the Improved Conventional Rail (GO Rail) proposal in order to determine which alternatives were the less viable and which were worthy of being carried forward for a more detailed assessment. The analysis of Alternatives to the Undertaking is summarized in Exhibit 10 and discussed in greater detail below.

In terms of Economic Benefits, improved Conventional Rail service is expected to have a significant positive economic impact on Hamilton-Wentworth, as it strengthens the Hamilton-Lakeshore-Toronto linkage and attracts workers, shoppers and residents to Hamilton, focussed on a central station. The LRT and Bus options essentially replace the existing train meet bus service and are expected to result in limited economic benefits to the study area, although a new downtown station could be a catalyst for downtown development. Increased roadway capacity would have a positive economic impact but would not focus development on central Hamilton. As the major roadway capacity problems in the Toronto-Hamilton corridor are outside the study area, little impact on commuter traffic conditions would be expected from roadway improvements within the study area. No significant Economic Benefits would be expected on a regional basis from the provision of non-conventional commuter alternatives.

The Cost involved in the provision and operation of major new transportation facilities in a built-up area is significant, and although all the alternatives (with the exception of the Base Case) would likely have a capital cost in the same order of magnitude ($100 - $300 million) the ability to stage construction (and hence cost) in accordance with ridership or demand gives the Conventional Rail, Bus, and Roadway options a significant advantage over LRT. By definition, no cost is assigned to the Base Case, and non-conventional commuter modes could entail a wide range of costs.

Land Use Impact of each alternative corresponds in large part with the Economic Benefits assessment, with improved Conventional Rail service resulting in the greatest positive effect on land use, particularly in the vicinity of a Hamilton station. The Base Case is also rated highly due to its integration with current and future land use plans. Construction for Light Rail or Bus Link could have significant Land Use Impact, as new corridors are not generally available generally in the urban parts of the study area. Most significant changes or additions to the Roadway network would have both positive and negative

ALTERNATIVE	ECONOMIC BENEFITS	COST	LAND USE IMPACT	TRANS. NETWORK	FLEXIBILITY	SOCIAL IMPACT	NAT. ENVIRO. IMPACT	DEMAND	LEVEL OF SERVICE	OPERATION	OVERALL SUMMARY
LIGHT RAIL LINK	limited benefits	high front end cost	new corridor has major negative impact	replaces train-meet bus; requires complete LRT network to be effective	route and operational restrictions	new alignment has major impact	new corridor potential for significant impact	replaces train-meet bus; little new demand created	no improvement unless entire network in place; intermodal stations	good operation on separate alignment; need to transfer mode at each end	GO-ALRT rejected due to high cost of entire network needed
BUS LINK	limited benefits	high staged cost	new corridor has major negative impact; otherwise none	replaces train-meet bus; no impact on network	flexible routing but limited by traffic conditions in mixed flow	busway has major impact; bus lanes less impact	flexible geometrics and operation minimize impact	replaces train-meet bus; little new demand created	good service unless constrained by mixed flow traffic	good operation on separate r.o.w.; poor in mixed peak flow traffic	useful mode but constrained by roadway traffic in peak periods
ROADWAYS	positive impact but unfocused	high staged cost	existing corridor constrained; mixed impact	road network problems are not in study area; limited impact	commuter flexibility limited by severe peak period congestion	can vary widely; most existing corridors constrained	significant for new roads, minimized for widened road	demand for road capacity outside study area	good service but peak demand always above capacity	road operations in study area fine; problems outside area in peaks	roadway problems are outside study area
CONVENTIONAL GO RAIL	significant positive impact	high staged cost	positive impact in vicinity of terminal	improves mode choice opportunities; intermodal terminal possible	route and operational restrictions	impacts minimized (existing corridor); benefits possible	existing corridor use minimizes impact	creates demand due to improved commuter service	fast, convenient reliable, intermodal station possible	improved operations; limited by freight needs	greatest ratio of benefits to cost
OTHERS	not significant	wide range	likely negligible	supplements network with new mode; fringe impact	wide range	likely negligible	likely negligible	dependent on user cost and service provided	wide range; high cost for speed	wide range	impractical uneconomic or both
BASE CASE	none	none	none	does not improve network	significant constraints on GO service	potential benefits limited by commuting conditions	none	satisfies existing demand	deteriorating	GO constrained by CN/CP operations, other modes by traffic congestion	does not address problems or improve situation

MOST PREFERRED ⟶ LEAST PREFERRED

☐ ☐ ☐

EXHIBIT

10

SUMMARY OF ANALYSIS OF ALTERNATIVES TO THE UNDERTAKING

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

Ministry of Transportation

GO TRANSIT

The Regional Municipality of Hamilton-Wentworth

The Regional Municipality of Halton

impacts, and other modes would likely have a negligible effect on land use.

Current GO commuter rail Operations are severely constrained by factors beyond its control, constraints which Improved GO Rail Service on dedicated tracks would be designed to eliminate. Buses have great operational flexibility whereas the fixed rail LRT alternative is more limited in its operational features. Roadway operations in the study area are flexible but use is affected by peak hour problems elsewhere in the Lakeshore corridor.

The improvement of GO Rail service to Hamilton would be a final element in the strategy of providing a complementary range of transportation alternatives in the Toronto-Hamilton corridor and be very beneficial to the over Transportation Network. The LRT and Bus lines would only function as replacements for the existing train-meet bus service. Opportunities for a multi-modal transit terminal are present with all rail alternatives. Improved roadways would not necessarily improve the overall transportation network, and other alternatives would have a fringe impact on the network in the corridor.

The Base Case GO Rail service suffers from very limited Flexibility, due to freight rail traffic operational demands. Expanded rail facilities improve flexibility but certain route and operational restrictions are inherent in the concept of rail systems. Buses, on the other hand, are the most flexible of all public transit services but are limited by that level of service offered autos on the same roadways. Reliance on the Q.E.W. limits commuter auto flexibility between Hamilton and Toronto.

As pointed out in the GO-ALRT study, a Light Rail link on a new alignment has potentially significant Social Impacts, while Improved Conventional Rail facilities within existing rail rights-of-way would minimize the negative impact of a new service and result in greater social benefits (following from economic benefits) than other alternatives. Improved roadways can have significant negative social impact on adjacent areas, although traffic pattern shifts that result may benefit others. Non-conventional services generally have negligible negative social impact.

The Base Case implies the least change to the Natural Environment, followed by the Conventional Rail and Bus Lane alternatives that use existing transportation rights-of-way. Facilities on new alignments have the greatest potential for negative environmental impact, while most non-conventional systems have minimal impact on the natural environment.

A direct GO Train link to Hamilton is judged to be the most effective of the alternatives in creating Demand, while LRT and Improved Bus Service options offer little change from the current situation. The public perception of LRT being preferred to buses give it a higher rating. The Base Case satisfies but does little to create rider demand. Roadways are improved in response to demand but increasing the auto-based demand in the Lakeshore corridor is not a desireable transportation strategy. No demand is apparent for other commuter modes in the corridor.

The Base Case Level of Service is high enough to capture 80-90% of the existing Hamilton-Toronto commuter traffic while the alternatives to it are all fundamentally based on improving the convenience and intermodal aspects of the level of service in the corridor. The elimination of an intermodal passenger transfer at Burlington gives the Conventional Rail system a higher rating but Hamilton terminal location is a significant factor for all alternatives with LRT and Bus terminals being located in Hamilton's core while the CN rail station offers a different level of rail service than the central CP station. The roadway Level of Service will continue to be constrained by capacity limitations well beyond the study area, and other alternatives could entail a wide range in Levels of Service.

5.3.3 Summary of Evaluation of Alternatives to the Undertaking

Amongst the four basic alternatives assessed in the previous section under "Alternatives to the Undertaking", neither the Base Case nor a Light Rail Link were determined to effectively improve service for the commuter demand in the Hamilton-Toronto corridor. Of the remaining two alternatives, an improvement in conventional (GO) rail service to Hamilton is equal to or better than improved bus services in almost all factors. The analysis confirms that Improved GO Rail service is the most preferred alternative means of improving commuter service to Hamilton. The operational flexibility of an improved bus service allows it to be considered as an important supplement to rail service for those rail alternatives involving less than full service. Exhibit 10 provides a brief summary of the evaluation of modal alternatives to the undertaking.

5.4 Analysis Of Alternative Methods of Carrying Out the Undertaking

A great number of ways of improving the GO Rail service to Hamilton are possible, both singly and in combination. The alternatives are analyzed in terms of the four basic components of GO Train service: route, level of service, station, and train storage. Five major analysis factors are used:

- TRANSPORTATION SERVICE
  - Rail
  - Bus
  - Staging

- ECONOMIC EFFECTS
  - Commercial
  - Residential
  - Tourism
  - Attraction to Hamilton

- CONSTRUCTION COSTS
    - Rail Costs
    - Structure Costs
    - Tunnel Costs

- SOCIAL EFFECTS
    - Community Intrusion
    - Noise
    - Construction Effects

- NATURAL ENVIRONMENTAL EFFECTS
    - Sensitive Areas
    - Vegetation
    - Water

5.4.1 Routes

Due to the immense impact the construction of conventional rail lines on a new alignment would have in the study area, only existing railway corridors were considered in the determination of the most appropriate route.

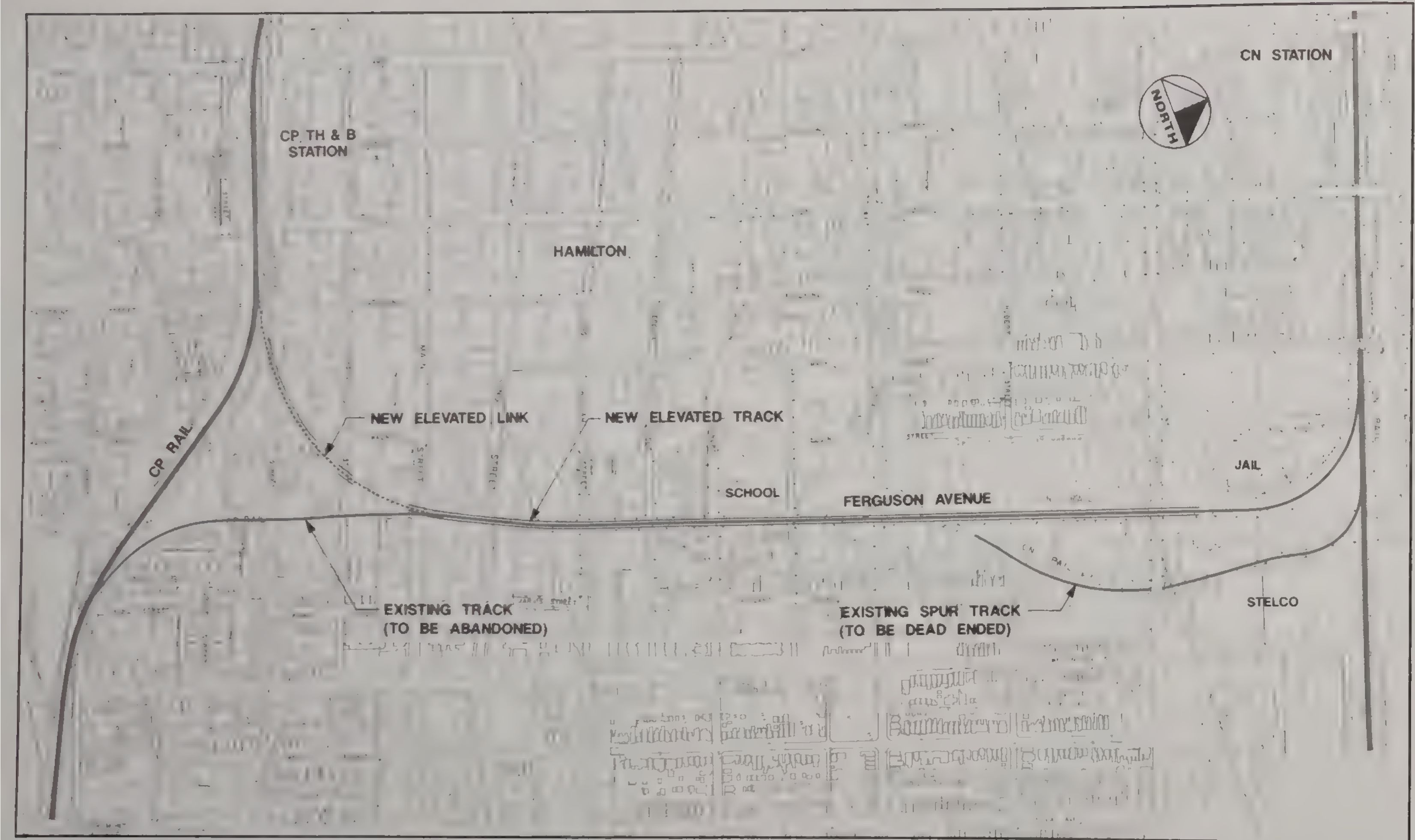
5.4.1.1 Rejected Route Alternatives

Other route options examined and rejected were: the Gage Avenue Belt Line connecting the CN and CP corridors in east Hamilton; a new rail link in the Red Hill Creek freeway corridor; and a new alignment in the Highway 6/Royal Botanical Gardens vicinity. Major insurmountable drawbacks in the areas of geometric standards, social impact, and natural environmental impact were apparent and led to their dismissal.

The Ferguson Avenue route connecting the CP and CN corridors in Hamilton was also rejected at an early stage, although it was considered in greater detail due to its perceived potential and high public profile. The alternative was proposed by a number of individual members of the public in an effort to allow GO Trains to loop through central Hamilton and provide service to both CN and CP stations without incurring the costs and problems of reconstructing the Hunter Street tunnel on the CP line. The feasibility plan developed for the analysis of the alternative is shown in Exhibit 11.

The Ferguson Avenue rail track is part of the CNR's Hagersville Subdivision and runs for the most part along the centreline of the street, curving eastward at the foot of the Escarpment to cross the CP/TH&B tracks and begin its climb up the Escarpment. At the north end of Ferguson Avenue, the line splits to cross Barton Street both at grade along Ferguson Avenue and grade separated via a spur line which underpasses the street and serves some industrial properties. Both tracks are connected with the CN main corridor through sharp curves allowing movement to and from the west.

Although the route was one of the first rail lines in Hamilton and the Grand Trunk Railway had its Hamilton Station on the line



EXHIBIT

11

REJECTED ALTERNATIVE : FERGUSON AVENUE LOOP

0 100 200 300 400 500m

SCALE

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

Ministry of Transportation GO TRANSIT The Regional Municipality of Hamilton-Wentworth The Regional Municipality of Halton

between Main and King Streets, it has fallen into disuse in recent years and CN is in the process of abandoning the line officially. The use of Ferguson Avenue as a freight rail route has meant that little commercial or residential development has been attracted to the street and the frontage properties are generally older homes, warehouses, car lots and industrial uses.

However, a number of the east-west streets crossing Ferguson Avenue are major transportation arteries on downtown commercial streets. With the construction of the new police headquarters and proposed development of the Theatre Aquarius project, the area around King William Street is being upgraded. A new elementary school is located at Wilson Street and the new Regional Detention Centre defines the west side of the street between Barton Street and the CN main lines.

Use of the route by GO Trains is subject to numerous physical constraints. Since peak train service coincides with periods of peak auto demand on the crossing roadways (including all the major arterials serving downtown Hamilton), the conflicts between the two modes would lead to unacceptable delays to either GO Trains or downtown traffic on a daily basis. Grade separation of the tracks with the crossing roadways would therefore be necessary.

The route could not function as a loop as it currently exists, as GO Trains would have to pull past Ferguson Avenue to Wentworth Avenue and switch to the CN line there before reversing direction to return to Toronto. A 300 m radius curve would be necessary to bring the rail line at an elevated level from the CP Station platform to the Ferguson Avenue right of way at Main Street. This would entail the removal of numerous buildings and either three road underpasses or a reworking of the local street network.

If the Ferguson Avenue track was to be used in one direction only by GO Trains from the CP to the CN route (i.e. downhill) a 2% grade on the track may be allowed, and if the rail grade began at the CN main line corridor the elevation of the rail line between Hunter and Cannon Streets would be sufficient to allow the cross streets to underpass the rail at their existing grades. Ferguson Avenue would be a split pair of one-way frontage roads and Barton Street would have to be lowered for 150 m either side of Ferguson Avenue to underpass the rail.

The cost of the Ferguson Avenue segment from the CP to the CN corridors would be in the order of $30 million and include the construction of more than a kilometre of railway viaduct and the purchase of 15 residential and 5 commercial properties. In addition, since the route would entail use of both the CN and CP corridors by GO Trains, costs would apply not only for the required track and signal improvements on the CP line between Hamilton Junction and the CP/TH&B Station but also for additional track and signals and whatever reconstruction is necessary in

CN's Hamilton Yard and Station area. Since the Hamilton Yard changes, additional CN track, and construction of the Ferguson Avenue link would have a total cost far greater than the $40 million reconstruction of the Hunter Street Tunnel, and service on the route would still be limited by the Tunnel's single track, it would be far more economical to simply reconstruct the Tunnel for two tracks.

Of likely greater significance to the community would be the visual, noise and economic effect on the community of a 6 m high structure along Ferguson Avenue, supporting a conventional rail (not LRT) track at the third storey level. Such a structure would have a permanent effect on the development or redevelopment of Ferguson Avenue itself and would act as a physical and psychological barrier to expansion of the downtown core past Walnut Street.

From the point of view of the user, a commuter taking the GO Train from the CN Station to Toronto in the morning would return in the afternoon to stop at the CP Station before looping the downtown and returning to the CN Station. The same situation would apply in the reverse to CP/TH&B Station users. Five to ten minutes would thus be added to nearly every Hamilton commuter's daily travel time.

One Station is capable of handling the passenger demand, and the duplication of station facilities and out-of-way travel would imply higher operating costs for GO Transit.

In addition, since a level of service involving increased peak period service as well as some off-peak GO Trains and full integration of GO and HSR Buses is capable of development at either the CN or CP/TH&B Stations in any case, the construction of a rail line along Ferguson Avenue to join the two routes would only result in a minor increase in train service at off-peak times and directions.

The costs, constraints, and effects of the Ferguson Avenue loop alternative as outlined above far outweighed the benefits of the increased train service that would result, and the alternative was not pursued further.

5.4.1.2 Viable Routes

From the eastern limits of the study area at the Burlington Fairview GO Station to Hamilton Junction, the CN Rail Oakville Subdivision is the only corridor under study. Within Hamilton, however, two routes exist: the CN corridor to the north, continuing along the bay front and eastward through industrial areas and on to the Niagara Peninsula; and the CP route through central Hamilton and eastward to Stoney Creek and up the Niagara Escarpment.

5.4.2 Levels of Service

Conventional rail systems, particularly ones with a mixture of freight, yard, commuter, and express passenger traffic such as those under study, have physical and operational constraints on the level of service (i.e. timing and frequency) offered. Limits may also exist on the ability to improve levels of service through track expansion, operational shifts, and signal improvement due to physical, cost, or community impact.

For those reasons, a range of levels of service may be considered, involving nearly infinite combinations of one-way, two-way, peak period, and off-peak period service. The specific schedule of each train is beyond the level of detail of the study and will depend on the different rail demands at the time of implementation. Specific schedules will be subject to agreement between GO Transit, CN Rail, CP Rail and Via Rail Canada at that time. Alternative levels of GO Train service may be grouped and summarized as follows:

- existing: 3 one way peak period trains
- increased up to 7 one way peak period trains
- two way peak period service
- two way peak period service with some off peak trains
- "full service" - that level of service currently in place at Oakville; nominally 20 minute peak direction peak period frequency and hourly off peak service.
- ultimate: in the long term, increased train frequency beyond current full service (e.g. 10 minute peak frequency).

5.4.3 Stations

In addition to the respective CN and CP Hamilton Stations, on-line station locations were identified to supplement the downtown sites.

A station in the vicinity of Waterdown Road was proposed in the GO-ALRT study and remained an option in the current study. It could serve Burlington West residents, auto-based commuters from Hamilton-Wentworth using Highway 403 and overflow demand from the Burlington Fairview GO Station to the east.

A station on the CP line in the vicinity of Kay Drage Park adjacent to Highway 403 was proposed in the GO-ALRT study to act mainly as a Highway 403 auto-based commuter station.

Another alternative, for either a terminal or on-line station, was identified at the Main Street/Dundurn Street area of the CP Line.

No other feasible sites for conventional rail stations have been identified. The on-line stations would allow the staging of the extension of full service to Hamilton from Burlington, opening up a range of service options, should full service not be extended initially.

In studying the opportunities for on-line stations, plans were prepared for all three sites - Waterdown Road, Kay Drage Park, and King/Main/Dundurn.

The Waterdown Road site is a large undeveloped property readily accessible from Highway 403 with only minor modifications to the existing partial interchange.

The Kay Drage Park site would require a new interchange with Highway 403 very close to the Main Street and King Street interchanges. A partial interchange plan was prepared for the proposed GO-ALRT station at the site, but the complexity, cost, and environmental impact of such work is very significant, particularly in terms of benefits received. An added problem at the Kay Drage Park site is the fact that most of the property is underlain by a sanitary landfill site active for more than two decades until its closure in 1974. Although the landfill is covered and the site is capable of serving as a station area, remedial systems to protect users from methane and toxic gases would likely be required, and long-term settlement of the landfill would be expected.

The wedge of City-owned property between King Street, Main Street, Highway 403, and the CP tracks is limited in size and has very limited access potential due to the proximity of the Highway 403 interchanges.

Both the Kay Drage and King/Main Station Sites are quite close to the CP/TH&B downtown terminal, resulting in slow GO train operation. If either station was to replace the Waterdown Road Station, Flamborough, Waterdown, and West Burlington commuters would not be served. If the station acted as a supplement to the other stations, the rapid commuter train nature of the GO service would be compromised and excess expenditure for a duplication of facilities would be required. Since both on-line Hamilton Station had significant constraints and held no advantage over the combined Waterdown Road-CP/TH&B Station pair, they were set aside following the first round of public review.

5.4.4 Storage Yards

Depending on the level of service and operating schedules for GO Rail extension to Hamilton, overnight, midday, or temporary storage yards may be required for GO Trains. Numerous rail yards owned by CN and CP exist in Hamilton, and yards exist on the CN main line at Aldershot and Fairview Street in Burlington.

The main CP Aberdeen Yard is located on the Waterford Subdivision southwest of Main Street Junction in Hamilton, and the Victoria Avenue and Forest Avenue Yards are on the CP line east of the Hunter Street Station, where another small yard area exists. The Aberdeen and Victoria Avenue Yards have been identified by CP Rail as potential overnight storage locations for GO Trains.

The main CN Hamilton Yard is located on the waterfront west of the CN Station, while the Aldershot Yard extends between Waterdown Road and King Road on the main CN line in Burlington.

The Aldershot facility is planned to undergo expansion by 1992 in conjunction with the expansion of the GO Train service between Oakville and Burlington. The GO Train storage yard for the Lakeshore corridor is at Willowbrook in Toronto, while mid-day GO Train Storage occurs at the Bathurst Street Yard near Union Station in Toronto.

5.5 Evaluation of Viable Alternatives

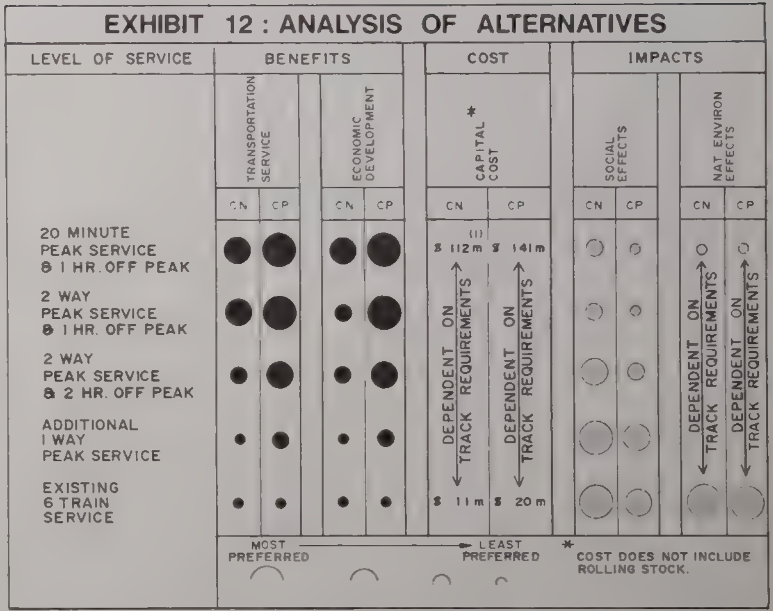
Two fundamental decisions were required in order to recommend an expansion strategy for GO Train service: the route to be used; and the level of service to be provided. Stations and storage yards, although important factors, did not drive the decision, as each route and level of service was capable of accommodating both stations and yards.

Exhibit 12 summarizes the analysis of alternatives which led to the formation of the Preliminary Technical Recommendations. The ratings and assessments are the opinions of the entire Project Team, and use the five analysis factors: Transportation Service, Economic Development, Cost, Social Effects, and Natural Environmental Effects as described in Section 5.4.

5.5.1 Transportation Service

As the GO Train program is above all a transportation service, this factor is the most heavily weighted of the five used in the analysis. As well, since every GO train user accesses the train by another mode (auto, bus, foot), the terminal location relative

EXHIBIT 12 : ANALYSIS OF ALTERNATIVES



(1) THESE CN COSTS ARE BASED ON A PRELIMINARY ASSESSMENT THAT DOES NOT REFLECT A DETAILED SIMULATION OF OPERATIONS WITHIN THE CN YARD OR THE INTERACTION OF THE GO/CN/PERIMETER ROAD AND WATERFRONT PARK PROPOSALS. IT IS POSSIBLE THAT A FINAL ASSESSMENT WOULD RESULT IN SIGNIFICANTLY HIGHER COSTS.

to its feeder network is at least as significant as the level of train service. In other words, a greater service improvement can be achieved through integrating feeder service with the existing level of train service than would occur through increasing the train service on its own.

General aspects of transportation service are discussed as follows:

5.5.1.1 Terminal Location

a) Proximity to Local Transit

It is in this area that the CP/TH&B route commands a major advantage over the CN route. The CP/TH&B station is within two blocks of twenty-three HSR local transit routes (i.e. every downtown-oriented HSR route in the City) whereas only two routes pass near the CN Station. Thus tremendous opportunities exist at the CP/TH&B site that do not exist elsewhere for integration of local and intercity transit services. The entire HSR network serving downtown from the Hamilton Mountain area (8 routes) use James and John Streets immediately adjacent to the CP/TH&B Station, and most of the east-west routes in the City use Main Street, two blocks to the north.

With the integration of all intercity Bus and Train services at a single terminal, further integration with local transit creates a complete transit network. Minimizing the number of transfers between buses en route to the terminal is also important in the accessibility and attractiveness of the station to commuters. Since the HSR downtown focus will remain at Gore Park (King Street between James and John Streets), almost all transit-based users of the CN Station would have to transfer to a shuttle bus, a distinct disadvantage to commuters, particularly in winter. For instance, an HSR rider from Hamilton Mountain would be on the GO Train approximately 10 minutes faster each day if it were at the CP/TH&B Station instead of the CN Station. This in part explains the fact that less than nine percent of current GO Train riders access the CN Station by HSR Bus while nearly thirty percent of GO Bus riders at the current downtown Hamilton terminal use the HSR for access. Use of the CP/TH&B Station for GO Buses and Trains would put the terminal even closer to most Hamilton Bus routes, whereas use of the CN Station would move GO services farther away from the HSR focus.

b) Intercity Bus Service

Access to the Station by intercity buses is a factor that is also weighted in favour of the CP/TH&B Station. With the proposed Perimeter Road's eventual construction, both Stations would be similar in terms of ease of Bus access from the Highway 403 corridor. However, intercity Bus stops on King and Main Streets between Highway 403 and the CP/TH&B Station provide good service to that densely populated corridor while no such on-street stops would be possible on the Perimeter Road route. The CN Station's proximity to the Perimeter Road means it provides better access for buses to and from the east (Niagara) but three factors mitigate that benefit: the majority of bus riders arriving in Hamilton from Niagara would be oriented to the core of the city and would have to transfer to a local bus to get there or to other local bus routes; no benefits accrue to through passengers due to the CN location, as Niagara-Toronto routes would use the Burlington Skyway to bypass Hamilton in any case; and since no construction schedule or funding has yet been announced for the Perimeter Road, a number of years could pass between the shift of GO Buses to the CN Station and the improvement of its current access via local streets.

c) Parking

The Waterdown Road Station is a constant with either Hamilton route, and would provide ample parking for those wishing to drive to the GO Train. On-site parking capabilities are similar at both the CN and CP Stations. At the CN site, however, much of the current parking is located on the Perimeter Road Right of Way, and if GO Train service were expanded and the Bus terminal relocated to the Station, a parking structure or property acquisition would be necessary for commuter parking. It would appear unlikely that free parking at the station could be maintained, given the expenditure necessary to reinstate and expand the parking area.

At the CP/TH&B site, redevelopment of the Station to provide Bus facilities would allow a parking structure to be constructed above. In any case, use of prime central Hamilton property to provide parking for commuters working in Toronto is an inappropriate land use strategy and is not desired by the City.

d) Proximity to Hamilton Destinations

A final transportation service factor in route selection is the proximity of the Hamilton terminal to the final destinations of those arriving in the City by GO Train or Bus. Since those passengers would not have a private vehicle at their disposal, they would rely on walking or local transit to reach their final destinations. Again, the CP/TH&B Station, due to its proximity to far more businesses, homes, visitor attractions, and bus routes than the CN Station, would be the most desirable terminus of the two for this group.

5.5.1.2 Level of Service

In terms of level of service, it is obvious that the more frequent the GO Train schedule, the more preferred the alternative. However, given the fiscal and physical constraints on achieving certain levels of service, a level that provides a reasonable transportation service for the least cost and impact is most appropriate. It may be pointed out that the GO Train and Bus service that is currently in place in Hamilton is more than capable of handling the total current ridership demand. However, in terms of convenience and reliability, the expansion of train service and the integration of the two modes at a single station provide major transportation service benefits.

a) Intermodal Integration

In particular, service to those who drive to the GO system would be improved by the integration of GO Bus and GO Train service at an intermodal station, as they would then be able to use the next available GO service in either direction throughout the day. This would eliminate the current problem posed GO Train riders who park their vehicles at the CN Station in the morning yet are unable to catch one of the three return trains in the afternoon. Others who use local transit routes or are picked up/dropped off would also gain from a consistency of return trip terminus. This integration would improve GO service even without an increase in the number of GO Trains. This service integration may be considered the first stage improvement in the level of service.

b) One Way Peak Period Service

A second stage of level of service improvement is the expansion of one way GO Train peak period service. The significant benefit of this is that GO Bus commuters that are now frequently subject to serious delays due to highway congestion would be able to take the GO Train with its more reliable timetable. Since GO ridership peaks significantly in the morning and afternoon rush hours, the expanded service would benefit the majority of GO users. A single 10 car train has the seating capacity of more than 30 buses, so a greater reduction in bus operating cost could result as buses are replaced by train service.

c) Two Way Peak Period Service

The third stage in expanded transportation service is the provision of two way train service in peak periods, which would serve commuters working in Hamilton and living in the Burlington/Oakville/Mississauga Lakeshore corridor. Since GO Buses run on fairly uncongested roads at these times, pressure for train service is not as great as in the reverse. Since it is also easier to drive to Hamilton than to Toronto from the Lakeshore corridor in the morning and the number of commuters making such a move is relatively small, the overall demand for two way service remains low. However, the provision of an alternate mode to driving and bus would be an extremely positive step in the balancing of transportation demand and facilities in the corridor.

d) All Day Service/Full Service

A fourth step in increasing the level of GO Train service to Hamilton is the introduction of GO Train service in both directions during the daytime and evening periods. This off-peak service would provide convenient, reliable access to the Lakeshore corridor and Toronto from Hamilton (and vice versa), and could eventually be expanded to the hourly full service frequency now in place on the more heavily travelled central portion of the Lakeshore line. It should be noted, however, that current and foreseen ridership demand in Hamilton would not require that level of service until some time beyond the study period, as only an initial improvement in train service is necessary to provide ample capacity for the next twenty years.

Since full GO Train service is currently planned to terminate at Burlington, Hamilton-destined train riders on those trains not extending into Hamilton would have to shift to GO Bus for the leg into Hamilton or take the Toronto-Hamilton express bus. The extension of as many trains as possible (i.e. full service) past Burlington to Hamilton would be necessary to eliminate this service discontinuity. An interim stop involving the use of the Waterdown Road Station rather than Burlington Fairview Station as a terminus is a possibility which would allow all Hamilton car-based GO passengers to park at the Waterdown Road Station and use the GO Train directly without transferring to another mode.

The combination of route and service level analysis as summarized in Exhibit 12, shows a strong increase in transportation service benefits for increased one way and two way peak levels of train service, with a less significant benefit for service increases beyond that; and a strong preference for the CP/TH&B route over the CN route in all instances.

5.5.2 Economic Development

Since improved transit links to Toronto form a significant part of the Hamilton-Wentworth Region's economic development strategy, the potential of the different GO Train alternatives to result in economic benefits to the area are examined in that context. Specifically, the impact of improving train service to either the CN or CP/TH&B Stations is considered, with the assumption that either station would be redeveloped as an intermodal transportation terminal.

The complete economic impact assessment is included in Appendix C and is summarized here. Relevant information on employment and development in the areas surrounding the two stations is presented in Table 16, and an illustrative summary of the evaluation of the economic impact of various scenarios follows in Table 17.

a) Overall Impact

Expanding service into downtown Hamilton will not result in major growth for the downtown core. There is no evidence that the lack of full service to Toronto is currently a barrier to Hamilton's development, and there is no evidence to suggest that service expansion will, by itself generate significant new growth. However, the economic base of Hamilton is tied to a certain extent to the economic base of Toronto, and one of Hamilton's attractive features as a place to live and work is that it is affordable, has the amenities and services of a major city and yet is within easy reach of Metro Toronto. For these reasons, there is a strong perception within the community that significant economic benefits would follow the expansion of GO Train service to the city. The possibility of improved GO Train service has been cited by a number of businessmen and developers in construction announcements and proposals made during the course of the study.

The overall impact of service expansion is likely to be a relatively minor increase in the likelihood of people moving into Hamilton overall and/or a faster achievement of growth potential. Hamilton has the necessary conditions for growth, such as relative affordability and ready supply of housing in and the relative amenities of a major downtown core. and improved accessibility to jobs in Metro, Peel and Halton combined with improved service would reinforce these conditions.

GO Train Service expansion could result in a relatively minor increase overall in the draw of major tourism attractions in the downtown core because Hamilton has unique, higher-order attractions (Copps Coliseum and Hamilton Place)and reliable convenient access could strengthen the draw from a market area that already extends to Metro and beyond.

In terms of attractions to business, Hamilton offers affordable prestigious space backed up by high quality support services, so improved GO Train Service could result in a relatively minor increase in the attractiveness of the downtown core to business.

Those most likely to be attracted as a result of service expansion are Toronto businesses or institutions considering the option of relocating to a less-congested but "downtown" location, but hesitating due to the problems of displacing employees; or businesses considering the option of establishing regional offices but requiring good linkages to Peel or downtown Toronto due to the nature of their business and labour force.

The activity generated by an intermodal station could also stimulate localized redevelopment, particularly for convenience-oriented retail and service businesses.

b) Impact Relative to Level of Service

In terms of level of service, the benefits of service expansion are more likely to be achieved as the level of service improves. However, more specifically:

- Improved 1-way service is likely to have no effect on economic development, with the possible exception of increasing the level of activity around the stations and stimulating local convenience service and retail businesses.
- Partial 2-way service is likely to have a minor effect, since it will at least introduce the possibility of reverse flow (i.e., into Hamilton in peak hour rather than out of Hamilton). However, both tourists and some businessmen will be interested in convenience of service, and travel in off-peak hours.
- Full service will have the greatest effect. Full service would allow for a reliable, very convenient linkage between Hamilton and the major markets between Hamilton and Toronto. In addition, full service may

TABLE 16 : ANALYSIS OF ALTERNATIVES : ECONOMIC DEVELOPMENT

CRITERIA	CP/TH&B STATION		CN STATION	
	EXISTING	POTENTIAL	EXISTING	POTENTIAL
Population within 750 m of station	12,890	14,120 *	6,900	6,600 *
Employment within 750 m of station	21,860	26,750 *	7,330	10,070 *
Residential unit development within 750 m of station	±7,540	±8,560	±2,960	±3,180
Commercial development within 750 m of station (includes office and retail commercial)	207,200 m² *** (office only)	±555,600 m² **	Negligible	±55,700 m² **
Tourist/Recreational attractions within 750 m of station	6 (Copps Coliseum, Art Gallery, Football Hall of Fame, Convention Centre, Jackson Square, Hamilton Place)	8 (The 6 in existing + Theatre Aquarius and Eaton Centre)	0	1 (Waterfront Park)
Compatibility of Terminal with Municipal Land Use/ Development policies	Not applicable Terminal unused	Compatible	Compatible since already in use	Less compatible since not in development area

* Population and Employment Figures Based on Year 2011 Ministry of Transportation Forecast

** Based on 65% of Maximum Permissible Floor Area Under Current Zoning.
Source: City of Hamilton

*** Source: Chambers & Co. Ltd., Hamilton Office Space Inventory, July 1987

TABLE 17 : EVALUATION OF ALTERNATIVES : ECONOMIC DEVELOPMENT

CRITERIA	CP/TH&B FULL SERVICE	CP/TH&B PARTIAL 2-WAY	CP/TH&B IMPROVED 1-WAY	CN FULL SERVICE	CN PARTIAL 2-WAY	CN IMPROVED 1-WAY
o Likelihood of increasing/ reinforcing the number of people moving to Hamilton	•	·	—	•	·	—
o Likelihood of increasing/ reinforcing the draw to major tourism attractions	●	·	—	•	·	—
o Likelihood of increasing/ reinforcing attractiveness of the core to businesses	●	·	—	•	·	—
o Likelihood of stimulating/ reinforcing localized redevelopment and convenience order businesses	●	•	·	•	·	—

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have a greater psychological impact on investors for whom easy linkage to Toronto is important.

c) Impact Relative to Station Location

The summary evaluation of the CP and CN alternatives from an economic impact point of view is illustrated in Table 17. In general, the CP full service alternative has the greatest economic development potential, while at the other extreme the CN improved one-way service will likely have no effect. CN full service also has economic development potential but not as great as CP full service.

- CP/TH&B full service would provide the highest level of service to the downtown core and would be the most likely of all the alternatives to increase the attractiveness of Hamilton as a place to live, visit and work. In addition, full service, in association with an intermodal terminal, would be most likely to generate growth in local convenience-order businesses.
- CP/TH&B partial 2-way would likely stimulate/reinforce the economic development of the downtown core. By providing the opportunity for two-way flow, (i.e. people from Metro and Peel can come into Hamilton in the morning and leave at night), an opportunity is created.
- CP/TH&B improved 1-way is unlikely to have any effect on economic development although it may improve the convenience of the service for downtown users.
- CN full service would also benefit Hamilton although the distance to the major, downtown market and tourism/business destinations is greater than for the CP station. AS a result, the potential for stimulating and/or reinforcing the development of the core is less than the CP/TH&B full service alternative.
- CN partial 2-way would have a similar impact to the CP/TH&B partial 2-way service, although the likelihood of stimulating localized redevelopment and convenience-order businesses is smaller, since the potential commercial retail market close to the station is smaller.
- CN improved 1-way is unlikely to have any effect on economic development, although it may improve the convenience of the service for downtown users.

Finally, if GO service is not expanded to downtown Hamilton, growth will likely continue, but at a slower pace, especially in the future if congestion along the QEW/403 increases and makes it difficult for people to live in Hamilton and commute to Peel or Metro Toronto.

5.5.3 Cost

a) General Notes

Studies carried out by CP Rail and CN Rail concerning the expansion of GO train service in their respective corridors included preliminary cost assessments. Since the alternatives under consideration make use of railway facilities and corridors almost exclusively, the figures supplied by the railways are used for the comparative cost analysis.

However, it should be noted that:

- railway cost elements, unit costs, and assumptions made differ between the two Rail companies;
- no cost was assigned by CN Rail to work necessary in the Hamilton Yard for the CN alternative, as the alternative was not developed to a sufficient level of detail to allow such an assessment;
- the railway cost for the Burlington section is on a gross cost-per-kilometre basis, with no differentiations between expansion on the north side of the existing tracks compared to the south side. Due to the presence of the Aldershot Yard, expansion to the north may in fact cost more than to the south;
- final cost estimates will be provided by the railway companies only upon completion of the detailed design of the recommended alternative; and
- those cost estimates not included in the railway figures have been developed by the Project Team based on measured quantities, current unit costs and comparable experience elsewhere.

Given that cost estimates for railway work are the purview of CN Rail and CP Rail, who own the property, track, and signals, and that such figures are gross order-of-magnitude costs as provided by the railways, it should be recognized that the comparative costs for alternative routes and levels of service are for analysis purposes only, and that final detailed costs may be significantly different for each alternative.

It should also be noted that the number and locations of tracks and the cost assignable to GO Transit for the work remains undefined by the railways in a number of locations pending detailed design work, and would ultimately depend on the level of service recommended and the specific schedules of the affected trains. The result is that a range of costs must be considered.

b) Comparison of Alternatives

Notwithstanding the above caveats and limitations the cost comparison of the alternatives is summarized in Table 18. Items included (where applicable) in the preliminary cost estimates are:

- grading, excavation, fill, landscaping
- drainage, culverts
- structures, retaining walls, detours
- new track, replacement track, ties, ballast
- signals, turnouts, crossovers, switch heaters
- replacement of CNCP Telecommunications lines

TABLE 18 : PRELIMINARY COST ESTIMATES FOR GO TRAIN ALTERNATIVES

ROUTE	CN					CN-CP					COMMENT
LEVEL OF SERVICE / ROUTE SEGMENT	EXISTING $m	IMPROVED ONE WAY PEAK $m	TWO WAY PEAK $m	TWO WAY PEAK PLUS OFF-PEAK $m	FULL $m	EXISTING $m	IMPROVED ONE WAY PEAK $m	TWO WAY PEAK $m	TWO WAY PEAK PLUS OFF-PEAK $m	FULL $m	
BURLINGTON STATION - BAYVIEW JUNCTION	0	29	29-50	29-50	50	0	29	29-50	29-50	50	$29m for one way track, $50m for two. S.side track less than N.side; worst case assumed.
WATERDOWN ROAD	8	8	8	8	8	8	8	8	8	8	Station and Parking $5m; Interchange improvements $3m.
BAYVIEW JUNCTION - HAMILTON JUNCTION	0	2	2-4	2-4	4	2-4	2-4	2-6	2-6	6	Switches to CP cost $2m if CN track on S.Side, $4m if CN track on N.Side, $6m if 2 CN tracks.
HAMILTON JUNCTION - CN HAMILTON STATION	0	8	8-16	8-16	16	-	-	-	-	-	
CN HAMILTON YARD	0	0-10	10-30	10-30	10-30	-	-	-	-	-	Assumed cost. No information available.
HAMILTON JUNCTION - MAIN STREET JUNCTION	-	-	-	-	-	8	8	8-21	21	21	Replace track and signals. Add a track for higher levels of service.
MAIN STREET JUNCTION - HUNTER STREET TUNNEL PORTAL	-	-	-	-	-	1	1	6	7	7	Add up to two tracks, depending on level of service
HUNTER STREET TUNNEL	-	-	-	-	-	0	0	0-40	0-40	40	Significant two way traffic requires reconstruction for two tracks
CN STATION	6	6	6	6	6	-	-	-	-	-	Station costs include rehabilitation ($1m), Bus Terminal ($3m) and Property ($2m CN and $3m CP assumed)
CP/TH&B STATION	-	-	-	-	-	7	7	7	7	7	
GO TRAIN STORAGE	0	2	0-2	0-2	2	0	3	0-3	0-3	3	Storage need for two way service depends on train schedules
TOTAL ($million)	14	55-65	63-116	63-116	96-126	26-28	58-60	58-141	74-152	152	Totals in 1987 dollars

- Waterdown Road Station, paved parking area for 500 cars, bus loop, access roadways, changes to Waterdown Road/Highway 403 W-NS ramp, replacement of traffic signals, platforms, and access tunnel
- CP/TH&B Station rehabilitation, excavation, bus terminal construction, and property purchase
- CN Station rehabilitation, bus terminal construction and property purchase
- track and wayside power for GO Train storage of up to 6 trains
- Hunter Street Tunnel reconstruction as detailed in Appendix F.

The preliminary plans do not indicate a need to acquire property beyond the rail right of way and the Stations to provide expanded GO Train service.

c) Major Cost Elements

Table 18 shows that the estimated costs are of the same order of magnitude between the CN and CP routes in Hamilton. Three major cost elements are associated with level of service improvements: additional track on the CN line in Burlington; reorganization of the CN Hamilton Yard; and reconstruction of the Hunter Street Tunnel to allow two tracks on the CP line.

i) CN Burlington Corridor

The CN Burlington cost is common to both Hamilton alternatives, and the cost of a single new track would be triggered by any increase in the number of trains over existing levels. At some point, increased two way service would result in train meets in the corridor and a second new track would be required. This point would be determined by actual train schedules at the time and cannot be fixed at this stage.

ii) CN Hamilton Yard

The CN Hamilton Yard currently contains storage, classification, receiving, through, maintenance, and car repair tracks and other facilities. Since the main line splits a number of these functions, numerous conflicts may occur between yard activities and through GO Trains. CN Rail has indicated that a major reconfiguration of the Yard may be necessary if the frequency of GO Train service increases to the point where crossing the main line tracks is overly affected. As well, the physical requirements of one or two new main tracks imply some reconfiguration of adjacent areas. No cost estimate is available from CN Rail for these scenarios, and the figure of $10 - 30 million is strictly an assumption. The question would be studied in depth if the CN route were to be chosen as the preferred alternative. Placing severe constraints on the ability to reconfigure the Yard are the proposed Waterfront Park, just offshore, and the planned Perimeter Industrial Road, a major arterial which is proposed to run directly adjacent to and over the Yard property. Pressure already exists, therefore, for a reduction in Yard activities rather than an expansion.

iii) CP Hunter Street Tunnel

The Hunter Street Tunnel is single-tracked at present, and would be required to be replaced with a new twin track facility when train service increases to the point where major delays to GO and CP trains occur while waiting for clearance to enter the tunnel. Appendix D deals with the level of service implications of such a restriction, while Appendix F documents the feasibility and costs of replacing the tunnel. A cost estimate of $40 million is made for the work.

d) Cost Relative to Level of Service

The major cost items correspond to approximately three steps in level of service: existing service; the maximum level of service possible through the existing Hunter Street Tunnel (assumed to be equivalent to the limit on service of a single additional CN Burlington track); and any level, including full service, that requires replacement of the tunnel (corresponding to two new CN Burlington tracks). Preliminary estimates developed for the purpose of this comparison indicate the cost of improved existing service cost is under $30M, intermediate service in the order of $65M, and full service up to $150M.

5.5.4 Social Effects

Since expansion of GO Train Service involves only existing railway corridors, direct impact on neighbouring communities (social effects) is limited to the effects of more frequent trains on existing lines and the physical impact of track expansion by one or two tracks. More general socio-economic effects on the entire community are covered in Section 5.5.2 under Economic Development, while consideration of the alternatives in this Section is limited to factors of:

- noise;
- vibration;
- construction;
- visual impact; and
- land use

a) Noise

In terms of noise impact, the greater level of service, the greater the noise impact due to more frequent trains. Since the CP/TH&B route passes adjacent to residential areas west of the Hunter Street Tunnel and has a storage site adjacent to residences east of the Station, it has a greater noise impact on the community than the CN route, which does not pass residential areas. That difference notwithstanding, the total noise impact of full service on adjacent homes for either route is not more than three decibels (24 hour Leq). A twenty-train GO service would have an impact of, at most, only one decibel (24 hour Leq) at adjacent properties. It is generally considered that noise level increases of less than five decibels due to changes in a transportation facility are not of major significance. It should be noted that both alternative corridors are regularly travelled busy freight lines where long heavy freight trains dominate any noise impact both now and in the future.

b) Vibration

Earlier studies carried out to assess the vibration impact of various GO Train service expansions state that "the duration and level of ground vibration is expected to be lower than those produced by the freight trains currently running on or beside the right of way" (General Information on the Assessment of Noise and Vibration for the GO Transit Expansion; Hatch Associates, 1986). Accordingly, vibration due to GO Trains is not considered a significant factor in the analysis of alternatives.

c) Construction

The greater the amount of construction required in the rail corridor, the greater the related disruption to the community. The impacts under this factor relate to the effects on adjacent properties of construction activities and the more widespread impact of reconstructing various road crossings of the corridor. Since the CP/TH&B route passes through a densely-developed area with numerous adjacent residences, construction activities in its corridor would affect more people than in the CN corridor. Reconstruction of some crossings is required for any expansion of service, and the addition of one or two main line tracks for intermediate and full service levels would require further work. The impact corresponds to the different service levels described in the previous Section, with minimal impact for existing service; the replacement of a number of crossings, particularly in the CP corridor, at intermediate levels; and the major impact of the reconstruction of the Hunter Street Tunnel for advanced two way or full service levels. Detours are feasible and would reduce the impact at most crossings, and Appendix F documents the fact that Hunter Street accesses would remain open during Tunnel construction.

d) Visual Impact

The visual impact of expanded GO Train service would occur mainly in the area between the Royal Botanical Gardens and the CN Hamilton Yard. Each additional track required in the corridor may alter the view from the Harbour and the R.B.G. significantly, if expansion is to the water side and slope fill is required. At the same time, the CN route provides a more impressive view of the Harbour area from the GO Train than does the CP alternative. Thus there is not much difference between the routes, and impact is tied to the level of service and corresponding number of new tracks for this factor.

e) Land Use

The economic assessment pointed out the limited impact on land use of the service expansion, and noted that such changes that do occur would likely be in the vicinity of the Stations. Since the CP/TH&B Station area is already heavily developed, the relative impact of GO service on the area would be small compared to that of the CN Station. The Durand neighbourhood is concerned about redevelopment pressures near the CP/TH&B Station. Impact on land use is tied to the frequency and level of service, which must reach a "critical mass" before any impact is felt. This point comes with two way and full service, while the initial impact of combining the GO Bus and Train facilities would likely be limited to convenience-order shops in the immediate area. In the CN corridor, great pressure exists to reduce waterfront rail activity, particularly near the planned Waterfront Park, and any expansion into the Harbour close to the Park due to GO expansion would be viewed extremely negatively.

Overall, due to the CN corridor's relative isolation from residential land uses, the social effects associated with its use by GO Trains are lower than the CP route's. Social effects increase with level of service, gradually in terms of noise and land use impact, and in major steps in terms of construction and visual impact.

5.5.5 Natural Environmental Effects

There is little to choose between the CN and CP routes in Hamilton, as they both pass through urbanized areas with few natural features to speak of. The exception, of course, is Hamilton Harbour adjacent to the CN tracks, where any expansion of the Yard into the water due to GO Train expansion could have significant effects on the water quality and fish habitat there. However, such an expansion would also provide the opportunity to rehabilitate the shoreline through slope improvement, removal of contaminants, and re-establishment of the bayside littoral zone.

In the common CN Burlington section, the natural environmental impact follows from track expansion, and would be of greatest significance in the area of the Royal Botanical Gardens and Hamilton Junction. Any increase in service would require construction of a single new track adjacent to the existing two, with impact on the ravines and embankments. Further increases in service up to frequent two way or full service would further increase the impact, as a second new track would then be required on the opposite side of the corridor. The construction of the Waterdown Road Station and its associated access roads and ramps would impact the site initially as an element of the existing level of service.

5.5.6 Summary of Evaluation of Viable Alternatives
Preliminary Technical Recommendations

After balancing the benefits, costs, and impacts of the alternative routes in combination with levels of service, the following set of Preliminary Technical Recommendations were agreed upon by the Project Team:

Route

- SUBJECT TO ENVIRONMENTAL ASSESSMENT APPROVAL, SHIFT EXISTING SERVICE FROM CN STATION TO CP/TH&B STATION.

Level of Service

- PROCEED WITH DETAILED SIMULATION BY CN AND CP TO DETERMINE VARIOUS LEVELS OF SERVICE AND TRACK REQUIREMENTS (E.G. AT TUNNEL).
- SUBJECT TO ENVIRONMENTAL ASSESSMENT APPROVAL, PROVIDE INCREMENTAL IMPROVEMENTS IN LEVEL OF SERVICE AS

APPROPRIATE.

Stations

- ESTABLISH THE REQUIREMENTS FOR THE STAGED IMPLEMENTATION OF THE INTEGRATION OF BUS AND RAIL SERVICES AT THE TH&B STATION. THIS FACILITY WILL BE THE FOCUS FOR DOWNTOWN HAMILTON ACCESS TO THE GO TRAIN SYSTEM.
- PROTECT FOR THE FUTURE STAGED IMPLEMENTATION OF A STATION AT WATERDOWN ROAD. THIS STATION WILL PROVIDE THE FOCUS FOR REGIONAL ACCESS VIA THE HIGHWAY NETWORK TO THE GO TRAIN SYSTEM.

The recommendations reflected the very substantial advantage that the CP route has over the CN route in terms of Transportation Service and Economic Benefits, the similarity in terms of Cost and Natural Environmental Impact, and the minor disadvantages of the CP route in terms of direct Social Effects. The latter was felt to be minor, while the CN route's advantage in the area did not outweigh the CP route's appropriateness in terms of transportation function.

The preliminary recommendations also reflected a lack of detail available at the time regarding the specific schedules and levels of service possible. This was subject to further refinement and detailed work on the part of CN and CP Rail, and is one of the topics discussed in the next Section. Another area of further analysis was the location of GO Train storage yards. The recommendation to shift from the CN line in Hamilton meant the elimination of the CN Hamilton Yard from consideration as a storage site, but the other options were studied in detail as discussed in Section 5.6.4.

5.6 Refinement Of Preliminary Technical Recommendations

The review and general acceptance of the set of preliminary technical recommendations as documented in Appendix J was contingent on further detailed work being carried out in a number of areas. This further work included:

- Rail studies by CN Rail and CP Rail to determine the level of GO Train service possible for different track requirements, particularly in the areas of the Waterdown Road Station, Royal Botanical Gardens, and the Hunter Street Tunnel;
- Preliminary design and detailing of the two Station facilities, and in particular the inter-modal facilities at the CP/TH&B Station;
- Consultation with affected agencies and interest groups to ensure their input into the final designs; and
- Preliminary design of the facility and detailing of its environmental impact and mitigative measures.

Work carried out in four critical areas is documented in the following Sections.

5.6.1 Rail Studies

Since the original studies prepared by CN Rail and CP Rail in 1986 concerning GO Train expansion addressed only limited (6 one way trains each peak period) and full service scenarios, insufficient detail was available at the time of the preliminary recommendations to define the exact level of service possible through the existing Hunter Street Tunnel. As well, further information regarding the impact of that level of service on the CN corridor was required before completing the preliminary design and Environmental Assessment document.

Since the Hunter Street Tunnel appeared to govern the capacity on the line for an intermediate level of expenditure, CP Rail was approached first, in February 1988, to define the maximum level of GO Train service possible through the Tunnel, recognizing that no undue disruption of CP freight activities occur.

Appendix D contains the report prepared by CP Rail for the "intermediate" level of service and the results of the work are summarized in Table 19. It is important to note that train schedules used were for analysis purposes only and are not meant to represent planned or fixed schedules that would necessarily occur at the time of GO service expansion. Three different GO schedules were simulated, expanding on the original 6 one way peak period trains examined in the limited service report to assess the impact of: three trains each way; three trains each way plus some off-peak service; and 6 trains in the peak

TABLE 19 : SUMMARY OF CP RAIL SIMULATIONS FOR INTERMEDIATE LEVELS OF SERVICE

SIMULATION SCHEDULE	NUMBER OF GO TRAINS					ADDITIONAL TRACK REQUIRED	COMMENT
	AM PEAK		OFF PEAK	PM PEAK			
	EB	WB		EB	WB		
LIMITED (Dec. 1986)	6	0	0	0	6	None	Replace existing signals, providing new rail cross-overs at Hamilton, Main Street Junctions
A	3	3	0	3	3	None	Same as for Limited Service
B	3	3	8	3	3	One track between Hamilton Junction and west portal of Hunter Street Tunnel	Same as for Limited Service plus new track
C	6	2	0	2	6	One track between Junction and CP/ TH & B Station	One new track throughout corridor requires reconstruction of Hunter Street Tunnel

direction and two in the reverse (i.e. to Hamilton in the a.m.) in each peak period. As well, three different simulations were done for each schedule alternative, to include the existing, short-term, and long-term CP freight traffic levels.

Taking into account CP's requirements for freight capacity in the long term, the greatest level of GO Train service possible without reconstruction of the Hunter Street Tunnel would be similar to that identified as Schedule B in Table 19. As this level would provide two way peak period service as well as a number of off-peak (midday or evening) trains, it fits well in the preliminary technical recommendations and provides a good level of commuter service to Hamilton, without requiring the expenditure and impact of reconstructing the Tunnel. However, a need for an additional track between Hamilton Junction and the west portal of the Tunnel was identified for full implementation of the schedule.

With the result of the CP study as noted, CN Rail was contracted in May 1988 to assess the operational feasibility and track requirements for a 20 daily GO Train level of service in CN's Burlington corridor, corresponding to Schedule B as simulated by CP Rail.

The CN Rail report (See Appendix E) was published in November, 1988, and confirmed that a 20 daily GO Train level of service could be provided between Burlington Station and Hamilton Junction with the addition of a single new track between those limits. Although the specific schedule used in the CP simulations resulted in some schedule conflicts for off-peak trains in the CN corridor, it was indicated by CN that, with further scheduling discussions between CN, CP and GO Transit, a compromise schedule could likely be developed that would eliminate the conflicts while providing the approximate 20 train GO service.

The corridor review carried out by CN also indicated that, from operational, construction and cost points of view, the preferred alignment of the new track was south of and adjacent to the existing tracks. The location of the Aldershot Yard on the north side of the corridor was a major factor in recommending a southern track, as interference with yard moves and construction difficulties would thereby be minimized. As well, the addition of a track to the west (north) side at Valley Inn Road would pose significant problems in realigning the road in both plan and profile that would not occur for a track to the east (south).

5.6.2 CP/TH&B Station

Various options of a conceptual nature for development of the CP/TH&B Station as the major inter-modal transportation terminal in Hamilton were prepared in the analysis stage of the study. However, it was necessary to develop the concept further to a feasibility plan level, with the full participation of the various operators and terminal users so that a detailed understanding of the facility's feasibility, requirements, limitations, operation, and impact was available for consideration during the Environmental Assessment process.

To this end, a Subcommittee of the Project Team was formed in January 1988, with representation from:

- Ministry of Transportation - Project Manager
- GO Transit - Project Development, Bus Operations
- City of Hamilton - Traffic
- Region of Hamilton-Wentworth - Engineering, Urban Design and Neighbourhood Planning
- Hamilton Street Railway
- Canada Coach Lines
- McCormick Rankin - Consultant Project Manager

In consultation with the operators and municipal representatives, a set of design criteria were drawn up. It should be noted that the operators have a strong desire to move away from the crowded existing terminal on Rebecca Street, and plans in place since 1977 for a new terminal have been on hold pending the outcome of the current study. The major intercity bus operators at the terminal are GO Transit (in the Hamilton-Toronto corridor) and Canada Coach Lines (Niagara Peninsula and areas near Hamilton). A number of smaller, less frequent carriers also use the terminal. Hamilton Street Railway is the local bus operator, and owns Canada Coach Lines.

- The minimum facility requirements were agreed upon as:
  - 18 intercity bus bays
  - 10 layover/storage bays for intercity buses; back in preferred
  - 40 short term "kiss and ride" parking spaces
  - 4 taxi spaces
  - bus parcel express: 6 parking spaces plus 100 square metres storage/office space
  - 2 bus dispatch offices - 10 square metres each
  - drivers lounge
  - ticket and waiting room facilities for passengers

- Operational criteria were:
  - intercity bus flow southbound on James Street and northbound on John Street, with no contra-flow on Hunter Street. Buses exit only to John Street.
  - 4 - 6 HSR bus routes diverted through station.
  - buses at rear; parking at front of station.
  - geometric standards (turning radii, bus bays)
  - any long term parking to be provided at track level.

During the course of the Station development more than a dozen alternatives were prepared and reviewed. In reviewing the alternatives, analysis factors included the following:

1) Facilities - quantitive comparison of physical facilities on site.

2) Bus Operations
   - a) Street - bus operation in mixed traffic; bus routing.
   - b) Terminal - bus operation within terminal; safety; flexibility.

3) Passenger Operations - safety; access; ease; attractiveness.

4) Station - aesthetics; ease of maintenance; development potential.

5) Cost - bus, rail, station and parking structures; parking; operation and maintenance.

6) Staging - flexibility; construction disruption; ability to defer/share costs.

Within the site, there was no possible layout that would provide for all 18 bus bays in front of the Station (Hunter Street face). The bus operators stated that splitting the bus operations between two areas such as the front and rear of the site was extremely undesirable. There was, however, space for all the desired bus-related facilities at the rear of the station site if Beckley Street were incorporated into the site and the space between it and the CP/TH&B tracks were excavated down to the Beckley Street level. This proposal was found to be structurally feasible and would provide a flat street-level envelope approximately 205 metres by 40 metres with access to both James and John Streets. Three functional alternative platform layout concepts were prepared. Formal agreement from the City of Hamilton would be required for the use of the Beckley Street right of way, and maintenance of the access to the parking garage for 135 James Street South from Beckley Street near James Street was incorporated into the alternative terminal layout plans.

The bus terminal location at the rear of the Station allowed the front to be redeveloped to provide all of the short-term parking, parcel express pick-up, taxi, and drop off facilities required. This approach also addressed the urban design and historic context criteria, in that the Station facade and scale would be preserved without buses disrupting the ground level scene.

It should be noted that a meeting was held with the CP/TH&B Station Subcommittee of the Hamilton Local Architectural Conservation Advisory Committee during the above process. The plans for the Station, including preservation and rehabilitation of the building itself for use as a passenger terminal, met with the group's approval. The Station is nearly vacant and, having been designed as a high-volume passenger facility, can readily be rehabilitated to provide passenger services and leasable office space.

The CP/TH&B Station Subcommittee of the Project Team reinforced the study recommendations that commuter parking not be encouraged in downtown Hamilton but that it should be focussed on the Waterdown Road Station. Nevertheless, the displacement of some parking currently existing on site and the general shortage of parking in the area may be readily addressed by construction of a deck at track level over the bus facility, bounded by the tracks, James Street, John Street, and Haymarket Street with direct access to and from the latter at its corner with Hughson Street South. Further parking levels or air-rights development would ultimately be possible. However, as the proponent, GO Transit is providing the Waterdown Road Station for those wishing to drive to and from the GO system, it considers that it would be an inappropriate use of its funds to construct a costly parking deck in downtown Hamilton. A joint venture, possibly involving private developers and the City Parking Authority, is felt to be a more appropriate means of providing parking on the site. A single deck at track level could provide in the order of 270 parking spaces and could link approximately 100 further spaces in adjacent CP Rail property for a total of 370 spaces. Such parking could be let at current market rates and not be reserved for GO commuters.

5.6.3 Waterdown Road Station

The proposed GO Train Station at Waterdown Road in West Burlington is to serve as the primary location for auto access to the GO system in the study area, and modification to the interchange of Highway 403 and Waterdown Road is required to allow access to the site. As well, the Station building and platforms must be located in conjunction with CN Rail's plans for the corridor, including expansion of the adjacent Aldershot Yard.

The site for the station was identified as such during the GO-ALRT study, and the 6.7 hectares owned by the provincial government at the site is the western part of a large undeveloped block of land (the remainder owned mainly by CN Rail) bounded by Waterdown Road, Highway 403, King Road and the CN tracks. The lot is wooded, and has no access to or from Waterdown Road due to the layout of the existing partial interchange.

The existing interchange ramps were built in the mid-1970's to provide movements to and from the west only, although plans for a full interchange had been developed by the Ministry of Transportation in 1971. The GO-ALRT plans included a full interchange but it was never constructed.

Since ridership patterns on the GO Train system show that there is virtually no demand for access to the Waterdown Road Station from the east, it is proposed that only the necessary movement to and from the west be provided for (along with direct access from Waterdown Road for north and south traffic), with the interchange design allowing the eventual construction of ramps to and from the east. The latter, however, would not be part of the current project.

Various interchange alternatives were developed and reviewed with Planning and Design staff of the Ministry of Transportation's Central Region, and the provision of a partial interchange based on that developed for the GO-ALRT Station at the site was approved in principle. The interchange, shown in Exhibit 19A, will consist of a diamond type off-ramp from Highway 403, terminating at Waterdown Road near the existing ramp terminal.

A roadway providing access to and from the Station parking area extends to the east from the intersection, and provision is made for the ultimate construction by the Ministry of Transportation of a "buttonhook" eastbound on-ramp to Highway 403 from the Station access road. Allowance for the extension of the road to provide access to the CN property to the east is made.

5.6.4 GO Train Storage Yard

The main GO Train storage yard is in Willowbrook (Toronto) and empty trains are typically stored there overnight and shuttled out directly from the yard to the end of the line very early in the morning to be in place for the inbound commuting move. The trains return to the yard at the end of the day.

In Hamilton, the use of the CP line through the single track Hunter Street Tunnel means that capacity on the line is limited. By storing the GO Trains overnight east of the tunnel, the shuttling of trains from Willowbrook through the tunnel is eliminated and capacity in the tunnel is freed up for other train moves. Significant restrictions on GO service schedules could therefore result if storage east of the tunnel was not provided. These considerations eliminated the CN Aldershot Yard and CP Aberdeen yard from further study. Some possible GO Train schedules would entail the storage of up to 6 trains overnight in Hamilton, with each train consisting of ten bi-level passenger cars and an engine.

Several opportunities exist for train storage in the CP Rail corridor east of the tunnel:

- the area south of the CP/TH&B Station platform was once used for train storage but is proposed for use as the Bus terminal and parking area, and is incapable of storing more than three full GO Trains.
- the small yard in the vicinity of Forest Avenue could be developed to hold three train sets but would require backing out of the yard and crossing the CP main lines to get to the CP/TH&B Station, effectively tying up capacity in the corridor and nullifying the advantage gained by eliminating train moves through the tunnel.
- the area of the Victoria Avenue Yard has the capacity for five full train sets but would require the shifting or abandonment of the CN Rail Hagersville Subdivision, which crosses the CP tracks and begins its ascent of Hamilton mountain in this location. As well, a pair of interchange tracks between the CN and CP lines would be displaced, and the yard is adjacent to an established residential area. The CP main lines could be shifted in the yard to eliminate the crossing of the tracks by GO trains going to or from storage. A sixth train set, if necessary due to schedule needs, could be stored on one of the platform tracks at the CP/TH&B Station or on the Yard lead between the Station and Victoria Avenue.

- the Kinnear Yard, stretching between Wentworth Avenue and Gage Park on the CP line, is capable of expansion or use by GO, but it is three kilometers from the CP/TH&B Station and is currently in heavy use by CP for its freight operations.
- a fifth alternative would be the end-to-end stringing of GO trains along one or two tracks in the main line corridor east of the Station. Vandalism, maintenance, and operations of the trains would be problematic, and such a storage arrangement is not desirable from the operators viewpoint.

The only areas suitable for storage of five or six GO Trains east of the CP/TH&B Station are the Victoria Avenue and Kinnear Yards. Since the former is closer to the Station, is readily reconstructed to allow storage, and is preferred by both CP Rail and GO Transit, it is the recommended site. Implementation would be dependant on the abandonment of the Ferguson Avenue line (as currently the CN/CP interchange tracks in the site.

Recognizing that the actual number of GO Trains to be stored depends on the schedule used, it is nevertheless appropriate to plan for the maximum number of trains to ensure flexibility of operation and minimum long-term cost. For example, Schedule B as simulated by CP Rail (see Section 5.6.1) would require storage of only three trains whereas Limited Service or Schedule C would imply six trains stored overnight.

The design criteria for the GO Train storage yard include:

- no crossing of CP main lines by GO Trains if possible;
- 7.6 metres between main line and first yard track;
- 6.1 metres between yard track centres with vehicular access;
- 4.3 metres between yard track centres without access;
- building for storage, lockers, washroom (10m x 15m);
- electrical substation for wayside power (10m x 15m);
- provision of utilities (water, telephone, electricity, sewer);
- track accessible from both ends; and
- each track good for ten car consist (plus engine): 285 metres.

As well, municipal bylaws and provincial standards concerning light and noise impact on neighbouring residences apply.

A feasibility plan for the storage of GO Trains at Victoria Avenue yard was developed (see Exhibit 28 in Section 6.2) using the criteria above. The plan would shift the existing main lines to the south away from the residences abutting the corridor, and provide for five storage tracks between the homes and the main lines. As the main line tracks would be farther from the homes in the day than at present, at night the stored GO Trains would act as multiple parallel barriers to through traffic noise, and CP Rail's concerns about minimizing crossing of the main lines by GO Trains are addressed, it was felt that this layout was the most appropriate alternative from both the neighbourhood and operational perspectives. The noise produced by the GO Trains is offset somewhat by the shifting of the main lines (the dominant noise source in the area) for a net noise impact on the area of, at most, less than one decibel during the day and one decibel at night on a 24 hour Leq basis. This level of increase is significantly less than the five decibel increase that would normally require the consideration of mitigation measures.

The feasibility plan assumes the abandonment of the Ferguson Avenue line, currently proposed by CN Rail, and the relocation of the CN/CP interchange tracks by the time of GO Train service implementation in the corridor. If the CN Rail Hagersville Subdivision is to be maintained, its track through the yard area would be relocated to the south to join the CP main lines near the Forest Avenue yard. An additional track linking the Yard area and the CP/TH&B Station would be provided in the right of way previously occupied by the Ferguson Avenue track.

Access to the storage building and substation would be from Grant Avenue, and the track reconstruction would not extend beyond the Wentworth Avenue level crossing. Although accessible from the Wentworth Avenue end, the GO Yard layout would not result in GO Trains using the level crossing or affecting traffic on Wentworth Avenue.

The yard as planned has the capacity for five full train sets, and a sixth, if necessary, could be stored at the CP/TH&B Station itself on a platform track, or schedules could be modified so that only five trains were needed in Hamilton at the start of the day.

5.7 RATIONALE FOR THE RECOMMENDATIONS

The final technical recommendations for the expansion of GO Train service to Hamilton, as reviewed by the public and all affected parties in May-June 1988 are as follows:

FINAL TECHNICAL RECOMMENDATIONS

- The implementation of the recommendations will require approval under the Environmental Assessment Act. Construction will take place in the context of overall transportation requirements and the availability of funding at that time.

- ROUTE
    - Shift the existing GO Train service in Hamilton from the CN Rail Oakville Subdivision to the CP Rail Toronto Connection and Waterford Subdivision, terminating at the CP/TH&B Hunter Street Station.

- LEVEL OF SERVICE
    - Provide incremental improvements in train service as appropriate, up to the level of service that can be accommodated by the existing Hunter Street Tunnel.
    - Maintain supplementary GO Bus service as appropriate.

- STATIONS
    - CP/TH&B Station

      Transfer the functions of the existing Hamilton Bus Terminal to the CP/TH&B Hunter Street Station, which would operate as an inter-modal transit terminal.
    - Waterdown Road Station

      Provide GO Station facilities in the block bounded by Waterdown Road, Highway 403, CN Rail Aldershot Yard property and CN Rail Oakville Subdivision.

The third round of public involvement, during which the recommendations were reviewed, is documented in Appendix K. Very strong support for the recommendations was evident at the Information Centres, as well as at Municipal Committee presentations.

The study documented in this Environmental Assessment Report was intended to establish the technically recommended means of accomplishing the expansion of the GO Train service to Hamilton. No recommendation is made herein regarding a timetable for implementation. Availability of funding for construction following approval of the project will determine the timing of construction, and is beyond the scope of the study.

The recommendation to shift the GO Train route from the CN to CP corridor in Hamilton reflects the significant improvement in transportation service offered GO users and the potential economic benefits to the Hamilton-Wentworth region as a whole for the CP route, as documented in Section 5.5.

Two key factors lie behind the rationale for the final technical recommendations: the flexibility of GO Service at an intermodal (bus and train) terminal; and the ability, documented in Appendix F, to expand the Hunter Street Tunnel to two tracks and thereby allow full train service if and when required. Since the current and foreseen levels of ridership demand to and from Hamilton may be readily accommodated by the recommended level of service improvement, no warrant has been identified for the expansion of the Hunter Street Tunnel. Since such an undertaking would also have a significant cost and be disruptive to the community, it is not part of the final technical recommendations. In fact, Section 5.5.1 demonstrates that, with GO Trains and GO Buses operating out of a single downtown terminal combined with the Waterdown Road Station, a combined GO Bus/Train schedule that is equal to or better than full GO Train service will be offered Hamilton travellers.

The provision of a Waterdown Road GO Station is a fundamental part of the recommendations and works together with the CP/TH&B Station to encourage access to the GO system by the most convenient modes available. The Waterdown Road Station is planned for easy auto access, while the CP/TH&B Station is oriented to local bus, walk-in, and drop off traffic.

Section 6

Description of the Project

6. DESCRIPTION OF THE PROJECT

6.1 General Description

This Section describes the infrastructure recommended to allow the incremental improvement of GO Train service from Burlington to Hamilton. Along with the recommended track, station, access road, and servicing plans, the effects of such works on the surroundings is detailed, as are the mitigating measures that are recommended to minimize negative impacts. In particular, the interaction of the recommendations with any Environmentally Significant Areas/Issues identified during the study is detailed.

The recommended plans and profiles for the project comprise Section 6.2.

The plan in general calls for a single additional track from the vicinity of Brant Street to Hamilton Junction on CN Rail's Oakville Subdivision in Burlington, and in the CP Rail corridor from Hamilton Junction to the west portal of the Hunter Street Tunnel in Hamilton. Two Stations are recommended to be used: one near Waterdown Road in Burlington with a large parking area and access from Highway 403; and a terminal in Hamilton that will incorporate the functions of the Hamilton Bus Terminal at the CP/TH&B Station. The existing GO Train Service in Hamilton is recommended to be switched from the CN to the CP corridor. Modification of the Victoria Avenue Yard in Hamilton to allow GO Train storage is part of the plan. The construction of the recommended facilities will allow the incremental improvement of GO Train service to a level adequate for demand for the foreseeable future.

The opportunities that exist for staging the construction of the facilities to allow the early improvement of service are discussed in Section 6.3.8.

Table 20 summarizes the study recommendations, while the environmental effects relative to environmentally significant areas/issues, and the proposed mitigating measures and commitments to future work are summarized in Table 24 in Section 6.4.

TABLE 20 GENERAL DESCRIPTION OF UNDERTAKING

Corridor Segment	Chainage (Section 6.2)	Exhibit	Trackside Recommendations	Other Recommendations
Burlington (Fairview) GO Station to King Road	1+000 to 4+000	15, 16, 17	• Add one track to the south side of the existing main lines starting at Sta. 1+450 • Realign/reconnect wye tracks at Burlington Station.	• Extend culverts at Rambo Creek, Hager Creek, Indian Creek. • Use existing spans at Brant Street and Q.E.W. • Add deck to Plains Road structure. • Relocate CN maintenance shed at Gray's Lane.
King Road to Waterdown Road GO Station	4+000 to 5+880	18	• Add one track to the south side of the existing CN main lines.	• Extend culvert at Falcon Creek.
Waterdown Road GO Station and Hwy. 403/Waterdown Rd. Interchange	5+880 to 6+500	19	• Add one track to the south side of the main lines. • Eliminate siding of Aldershot Cold Storage • Provide two passenger platforms east of Waterdown Road, one on each side of existing main lines. • Add switches to allow GO access to all main line tracks at Station.	• Protect CN corridor for 6 main line and 4 Aldershot yard tracks (ultimate). Provide • GO station, tunnel to platforms, parking area for 500 vehicles and access from Waterdown Road in area between CN tracks and Hwy. 403. • Provide direct ramp (half diamond) from west on 403 to Waterdown Road to replace loop ramp. Protect for service road access to CN property to the east. Use existing Waterdown Road/CN structure for new track.
Waterdown Road to Halton Ceramics	6+500 to 8+600	20, 21, 22A	• Add one track to the south side of the existing CN main main lines.	• Add deck to Hidden Valley structure, using existing pier foundations. • Use existing Lemonville Road structure. • Lengthen culverts at Halton Ceramics creeks. • Widen railway embankment at Hidden Valley Park.
Halton Ceramics to Bayview Junction	8+600 to 9+700	22	• Add one track to the south side of the existing CN main lines.	• Pass under existing structures at Snake Road, Plains Road and Spring Garden Road (RBG pedestrian crossing). • Provide toe wall at Beth Jacob Cemetery. • Lengthen culvert at Plains Road. • Widen railway embankment where necessary at ravines.
Bayview Junction Hamilton Junction	9+700 to 10+700 (50+700)	23	• Add one track to the east of the existing CN main lines up to Hamilton Junction. • Install crossovers to CP track from new south track. • Further realignment of track and switches when new CP main line added as second phase.	• Widen railway embankment from Valley Inn Road to new south track (10+700). • Realign Valley Inn Road slightly to allow additional bridge deck on east side.

TABLE 20 : GENERAL DESCRIPTION OF UNDERTAKING (cont'd)

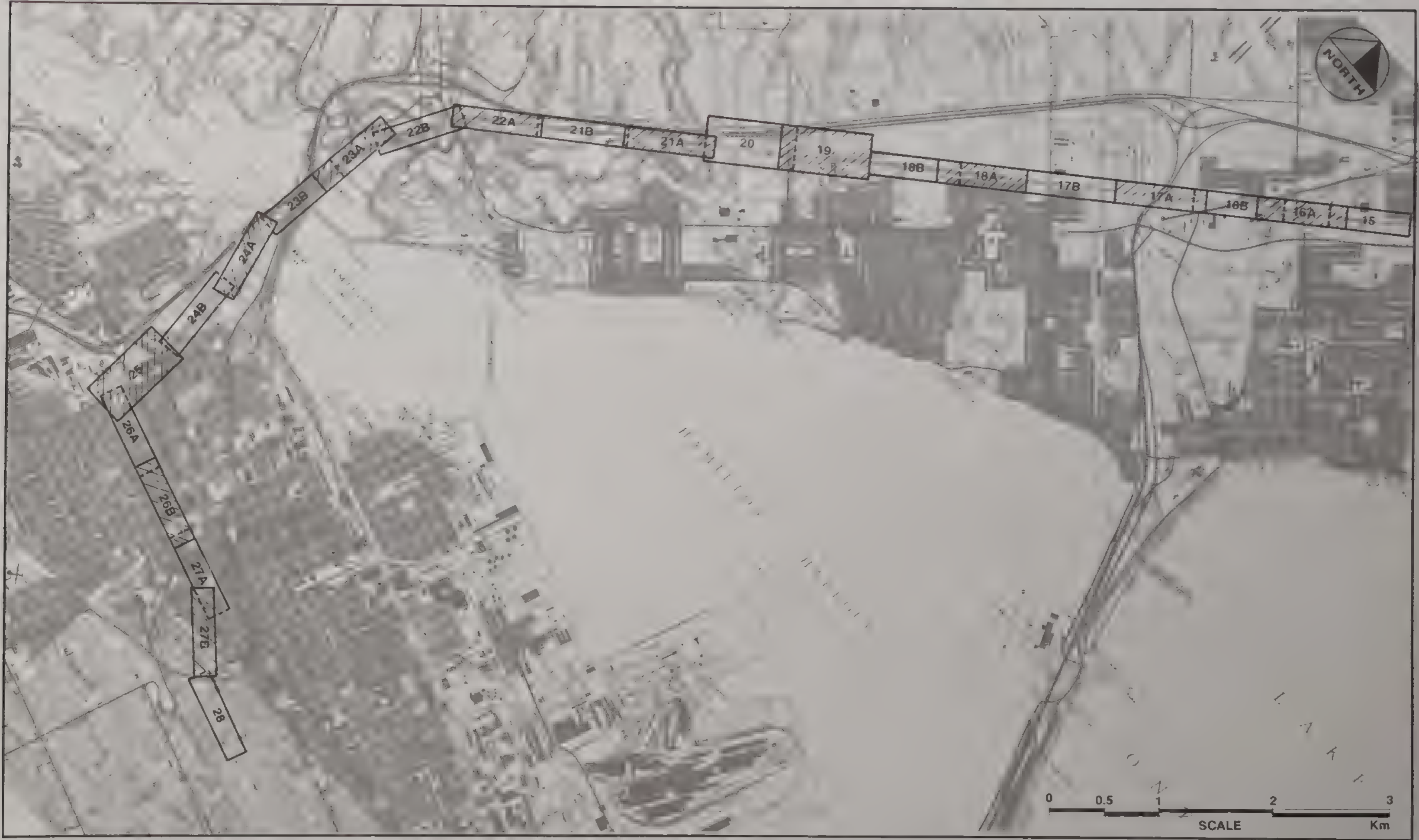
Corridor Segment	Chainage	Exhibit (Section 6.2)	Trackside Recommendations	Other Recommendations
Hamilton Junction to Main Street	50+700 to 53+100	23B, 24, 25	• For initial levels of service, replace track and signals. • At higher levels of two-way service, add a single track to the east of existing tracks at Desjardins Canal. • Realign tracks at Hamilton Cemetery to shift new track to west side from Cemetery to Main Street.	• For single track expansion, add deck to east side of structure over Desjardins Canal; • construct toe wall where necessary at foot of Hamilton Cemetery embankment; use existing Hunt St. structure but reconstruct King St. and Church Access structures; • construct toe wall where necessary in the vicinity of Hunt St. • For initial levels of service, no changes in track aligmment necessary.
Main Street to Queen Street	53+100 to 54+150	25, 26A	• For initial levels of service, replace track and signals. • At higher level of service involving frequent two way trains, add a single track from Main St. to Ray St. • Realign existing track to allow the two tracks to be centred in the existing track bed. • Reconstruct cross-overs at Main St. junctionand wye at Poulette St.	• Centering tracks in existing track bed (for added track) allows use of existing Main, Dundurn, Locke, Pearl, and Ray St. structures. • Install toe wall in cut where necessary.
Queen Street to Charles Street (Hunter Street Tunnel)	54+150 to 54+800	26	• Renew and replace existing tracks, ties and ballast with continuous welded rail.	• None
Charles Street to Catharine Street (CP/TH&B Station)	54+800 to 55+400	27A	• Renew and replace existing track, ties and ballast with continuous welded rail.	• Redevelop Station block (incorporating Beckley St.) as an intermodal terminal. • Rehabilitate Station building. • Remove and excavate the area south of tracks down to street level. • Provide bus terminal in area bounded by James, Haymarket, John and the tracks (with potential for parking deck above).
Catharine Street to Wentworth Ave.	55+400 to 56+900	27, 28	• Provide third track between CP/TH&B Station and Ferguson Avenue CN line. • Shift 2 CP main lines southward fromWentworth Ave. to Victoria Ave. to allow 5-track GO Train storageyard to the north. • Reconnect CN Hagersville subdivision to CP tracks if necessary.	• Use existing railway structures. • Provide maintenance shed and transformer room with access from Grant Avenue. • Provide wavside power and utilities to yard.

6.2 Recommended Plans and Profiles

Plans and profiles illustrating the recommended new infrastructure over the entire study area follow. A scale of 1:2000 horizontal/1:200 vertical is used, and a key plan is included for reference. It should be noted that the complete set of recommendations is shown, while initial stages of implementations may have far less impact. The plans shown are reductions from 1:500 scale originals on which the preliminary design was developed.

The exhibit sequence is somewhat unusual, as measurements along the tracks commence from the fixed east end of the study area towards Hamilton, until the corridor reverses direction (from Exhibit 26A onwards). This is a consequence of the "U" shaped study area as shown in the Key Plan, Exhibit 13.

Most of the base mapping dates from 1984 and, although every effort was made to update the information on it, some minor details may not reflect current conditions. A similar caveat applies to the names of property owners shown on the plan, which were gathered from Municipal assessment information in 1987 and may have changed since.



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KEY PLAN FOR EXHIBITS 15 - 28

EXHIBIT
13

EXISTING

═══════	SINGLE RAIL LINE - PLAN
- - - - - - -	PLANNED CN TRACK
═x═x═	TRACK PLANNED TO BE REMOVED BY CN
— — — —	BASE OF RAIL - PROFILE
. . . .	PROPERTY LINE
99 35	ELEVATION ABOVE SEA LEVEL IN METRES
‿	CONTOUR LINES AT 0.5m INTERVALS
------	CREEK; DITCH; WATERCOURSE
	TREE(S); VEGETATION
RW	RETAINING WALL
BELL	TELEPHONE LINE
G	GAS LINE
H	HYDRO LINE
PCA	POWER CABLE - AERIAL
PCU	POWER CABLE - UNDERGROUND
ST	STORM SEWER
SAN	SANITARY SEWER
W	WATERMAIN
OH SIGNAL	RAILWAY OVERHEAD SIGNAL
☒	HYDRO TOWER
oLS	LIGHT STANDARD
●	HYDRO POLE
□	CATCH BASIN INLET
—x—x—	FENCE
CLF	CHAIN LINK FENCE
300 ø	300mm DIAMETER PIPE
+0 8%	SLOPE OF RAIL MEASURED ALONG TRACK
K=240	VERTICAL CURVE OF RAIL (distance in metres required to change 1% in slope)
R=200	HORIZONTAL RADIUS OF CURVE (metres)

RECOMMENDED

═══════	SINGLE RAIL LINE - PLAN
———	BASE OF RAIL - PROFILE
1 +400	STATION IN METRES (east end of Burlington GO Station platform is 1 + 000; C P line in Hamilton starts at 50 + 700, or 10 + 700 on the C N line at Hamilton junction)
	VEGETATION REMOVED DURING CONSTRUCTION
	SLOPE

EXHIBIT

14

LEGEND FOR RECOMMENDED PLANS/PROFILES

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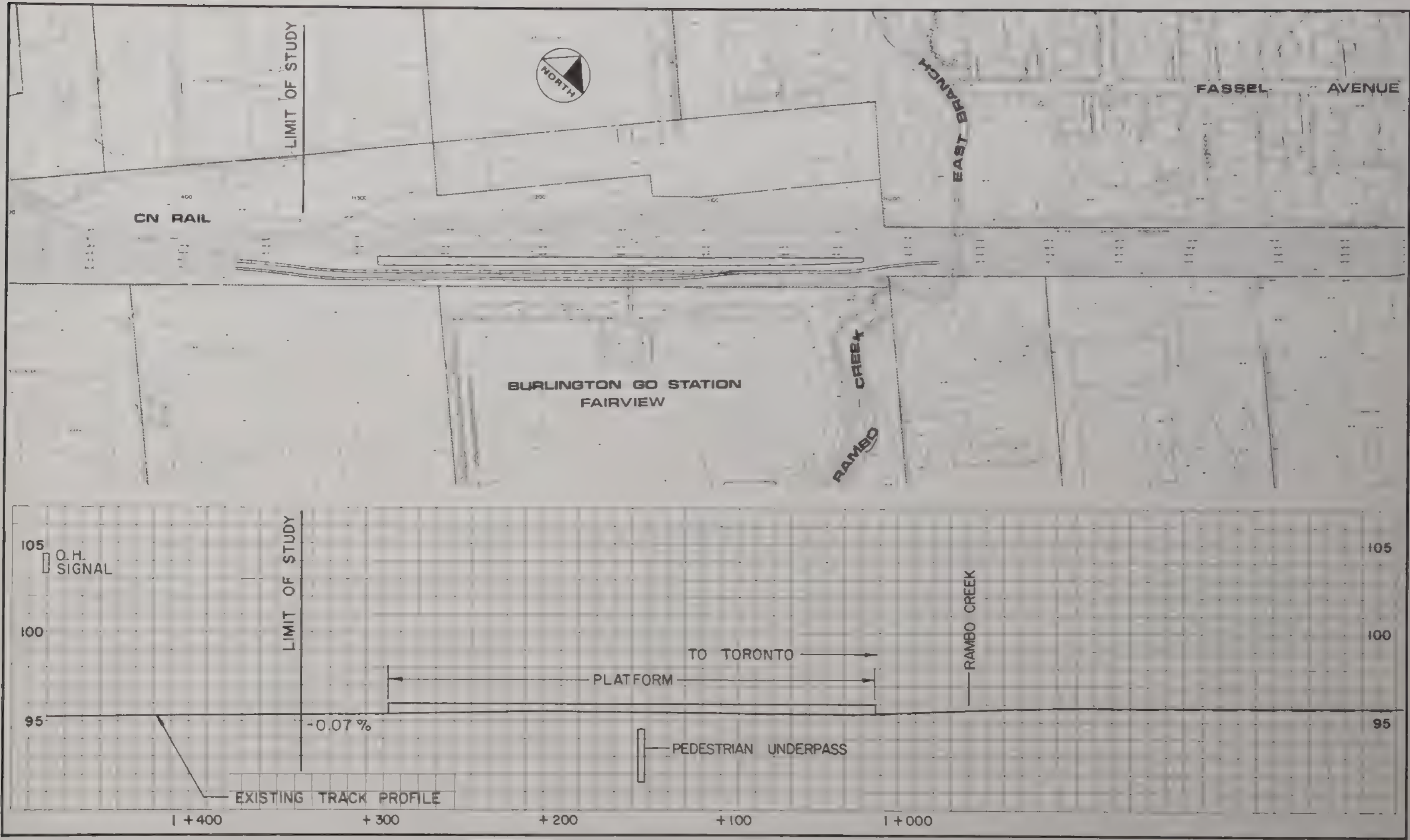

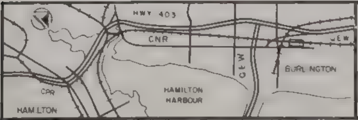

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GO TRANSIT

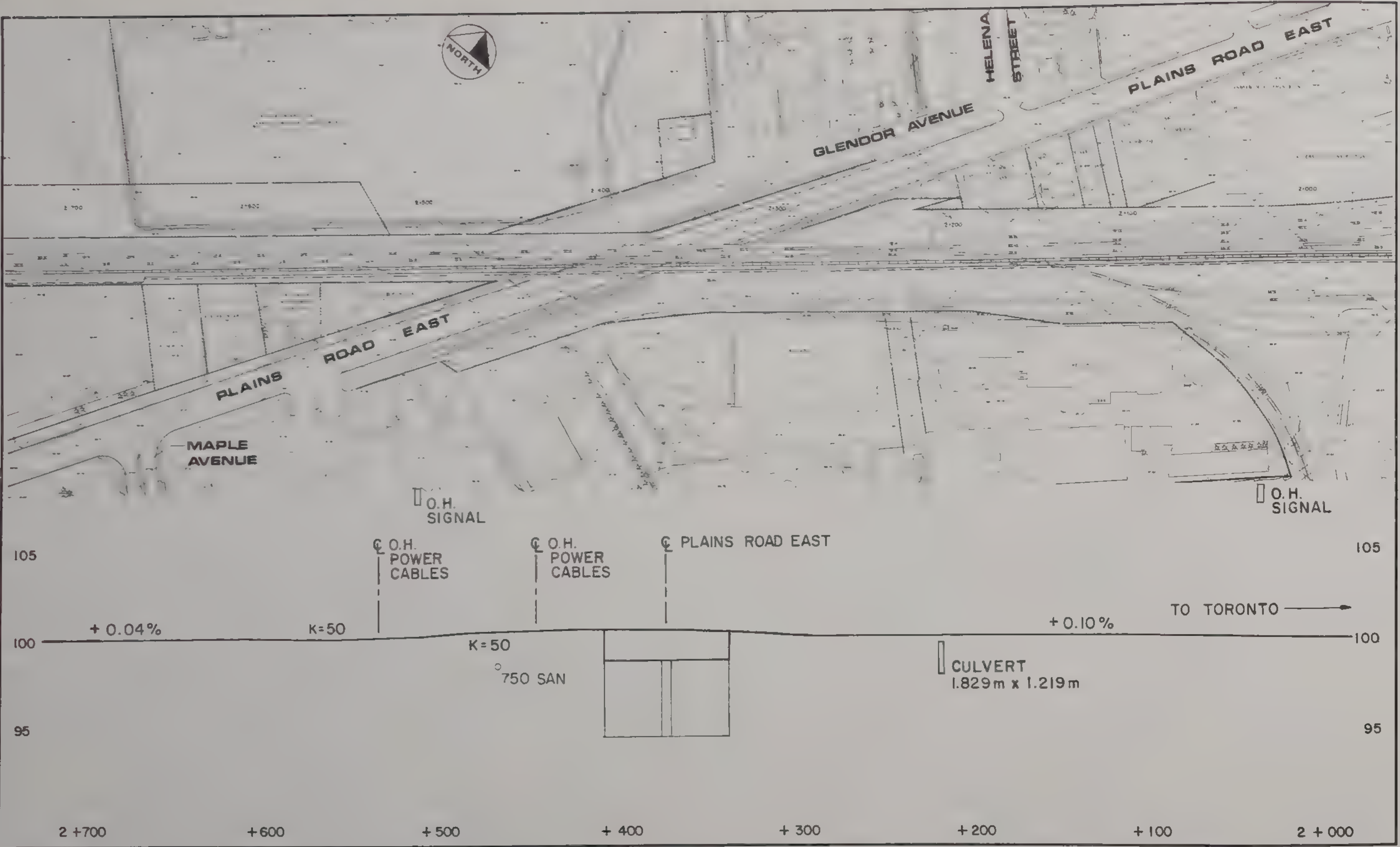
RECOMMENDED PLAN/ PROFILE

STA. 1+000 TO STA. 1+480

HOR 1 2000 0 50 100 150 m
VER 1 200 0 5 10 15 m

EXHIBIT

15



EXHIBIT

16B

RECOMMENDED PLAN/ PROFILE

STA. 2+110 TO STA. 2+720

HOR 1 2000 0 50 100 150 m.
VER 1 200 0 5 10 15 m

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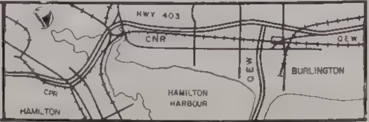

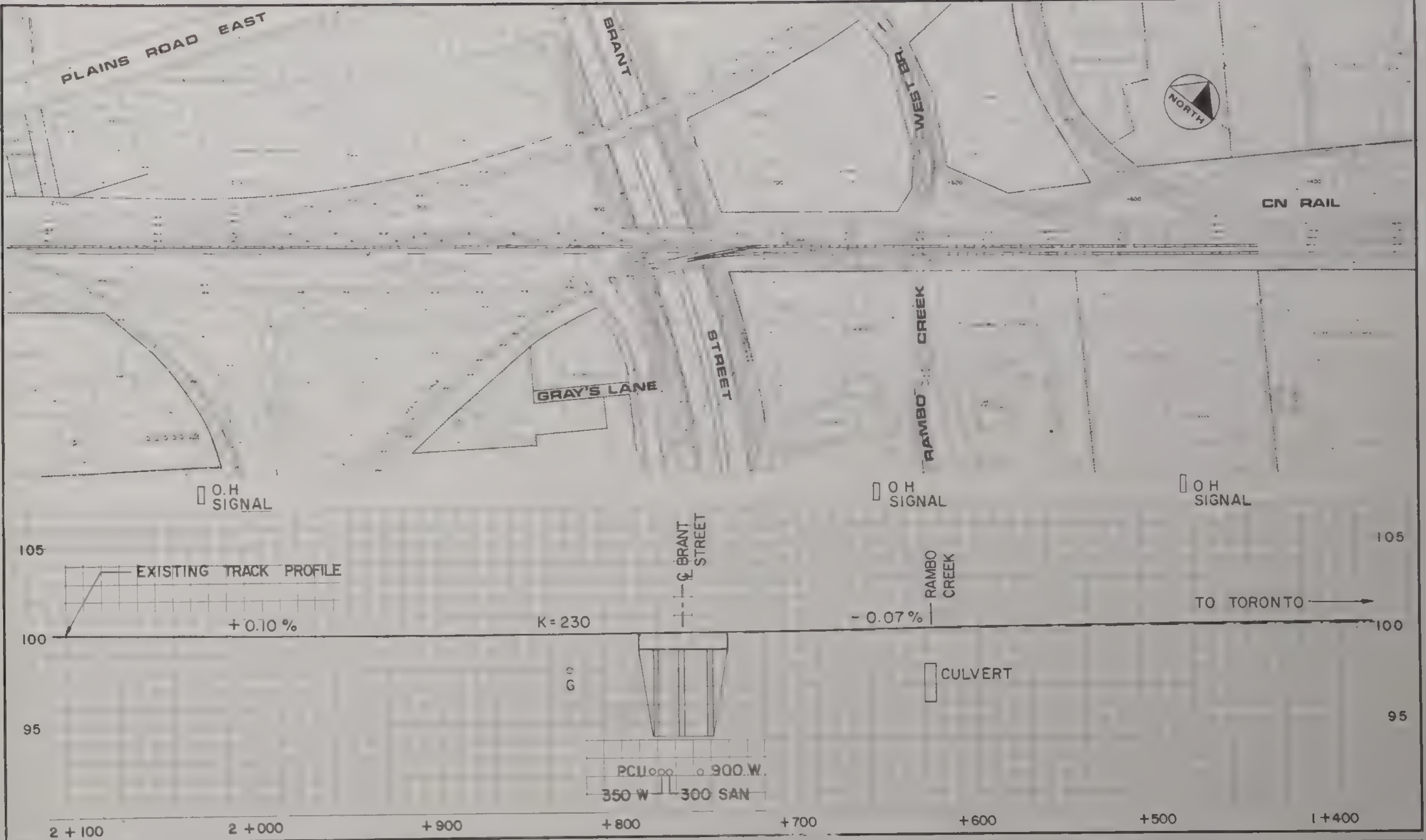

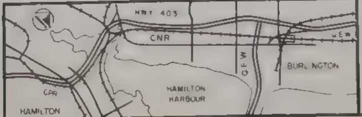

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RECOMMENDED PLAN/ PROFILE

STA. 1 + 480 TO STA. 2 + 110

HOR 1 2000 0 50 100 150 m
VER 1 200 0 5 10 15 m

EXHIBIT

16A

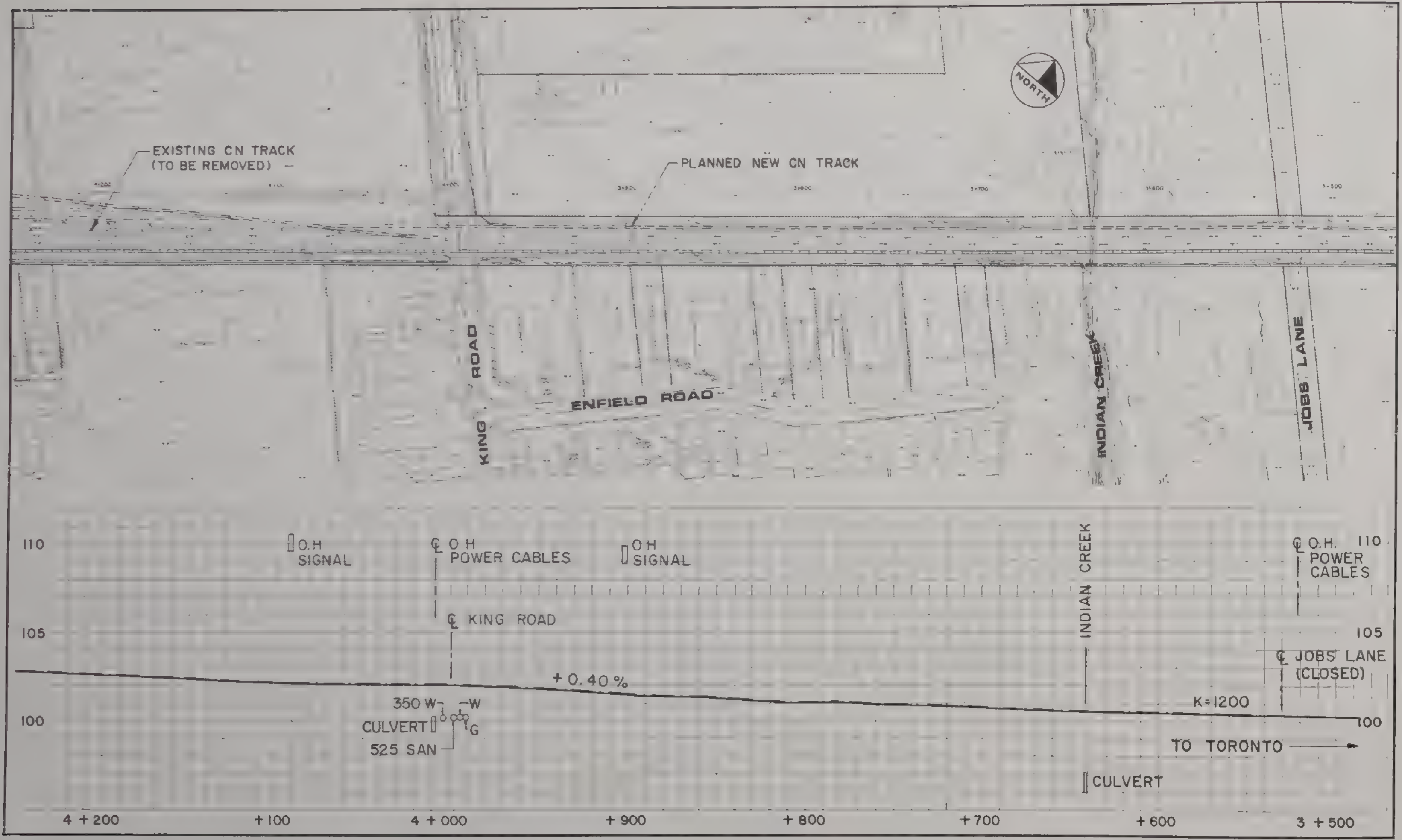

EXHIBIT
17B

RECOMMENDED PLAN/ PROFILE
STA. 3 +430 TO STA. 4 +240

HOR 1:2000 0 50 100 150 m
VER 1:200 0 5 10 15 m

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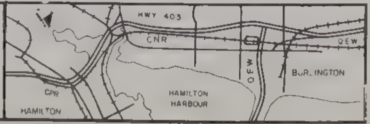

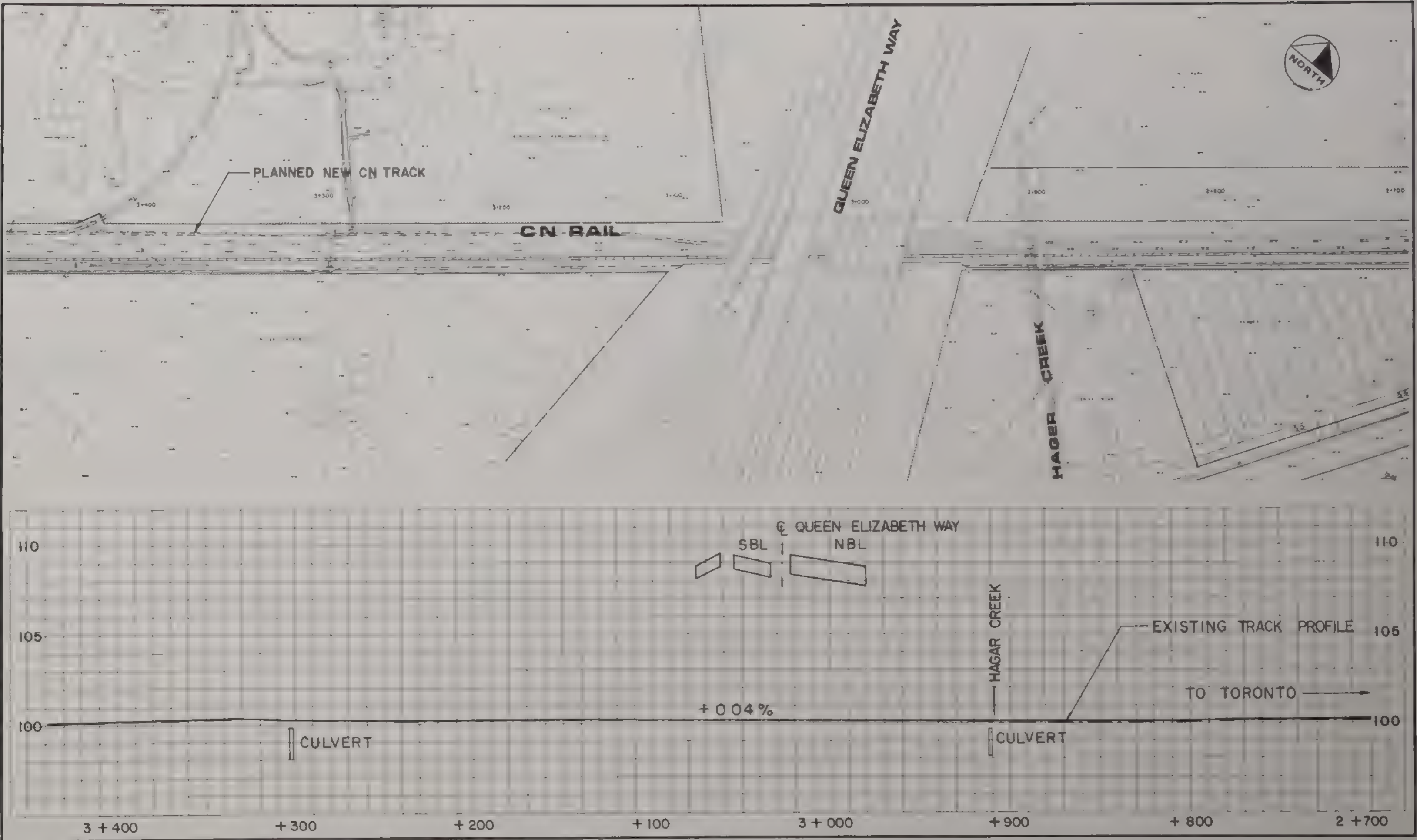

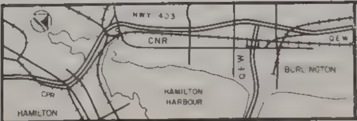

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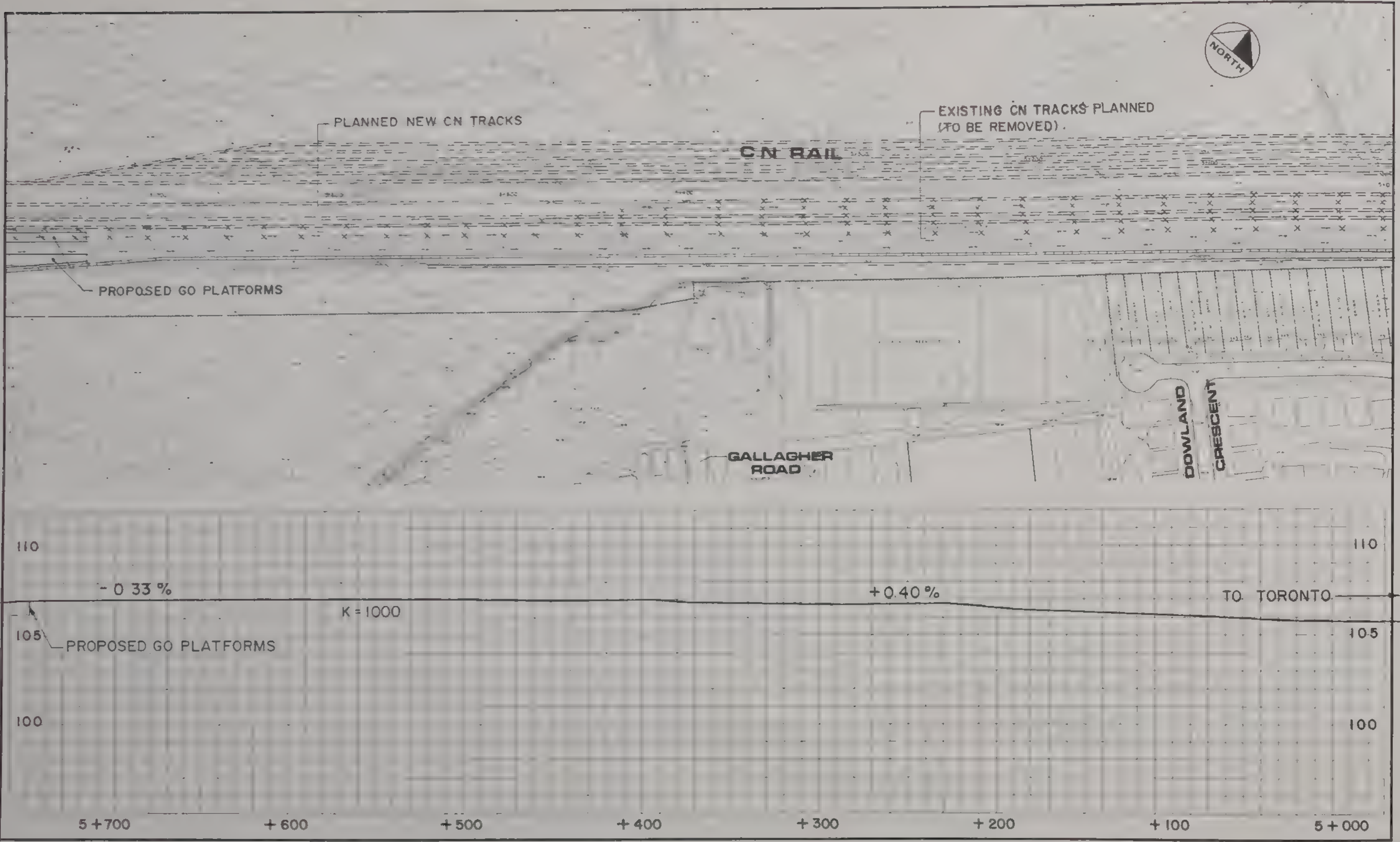
RECOMMENDED PLAN/ PROFILE

STA. 2 + 720 TO STA. 3 + 430

HOR 1 : 2000 0 50 100 150 m
VER 1 : 200 0 5 10 15 m

EXHIBIT

17A



EXHIBIT

18B

RECOMMENDED PLAN/ PROFILE
STA. 5+030 TO STA. 5+750

HOR 2000 0 50 [illegible] 50 m
VER 200 0 5 0 5 m

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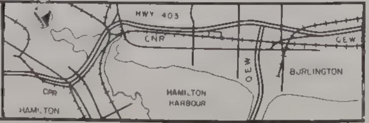

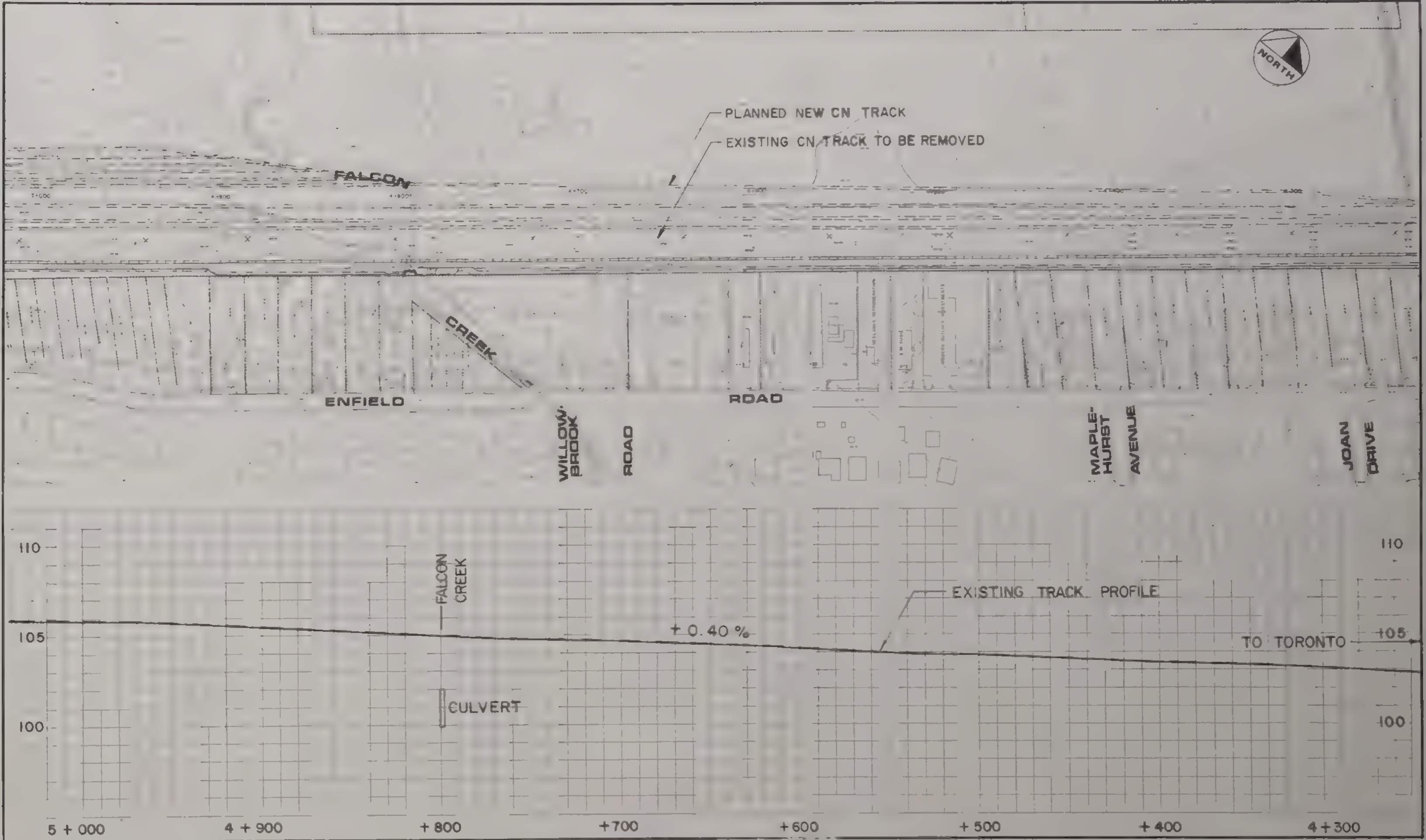

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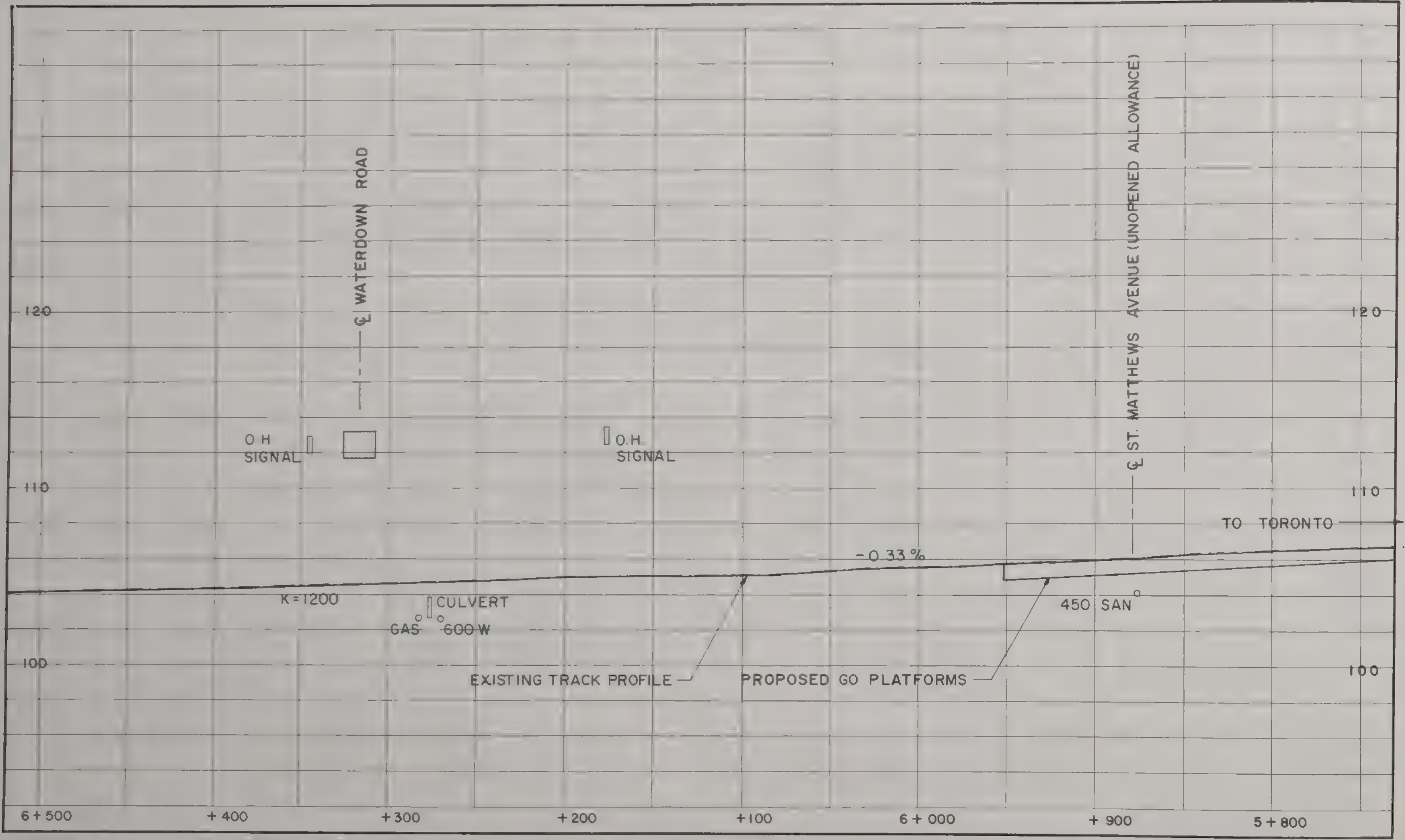
RECOMMENDED PLAN/ PROFILE

STA. 4+240 TO STA. 5+030

HOR 1 2000 0 50 100 150 m
VER 1 200 0 5 10 15 m

EXHIBIT

18A



EXHIBIT

19B

RECOMMENDED PROFILE
STA. 5+750 TO STA. 6+550

HOR 2000 0 50 100 150 m
VER 1 200 0 5 10 15 m

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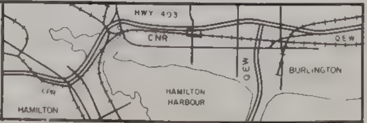

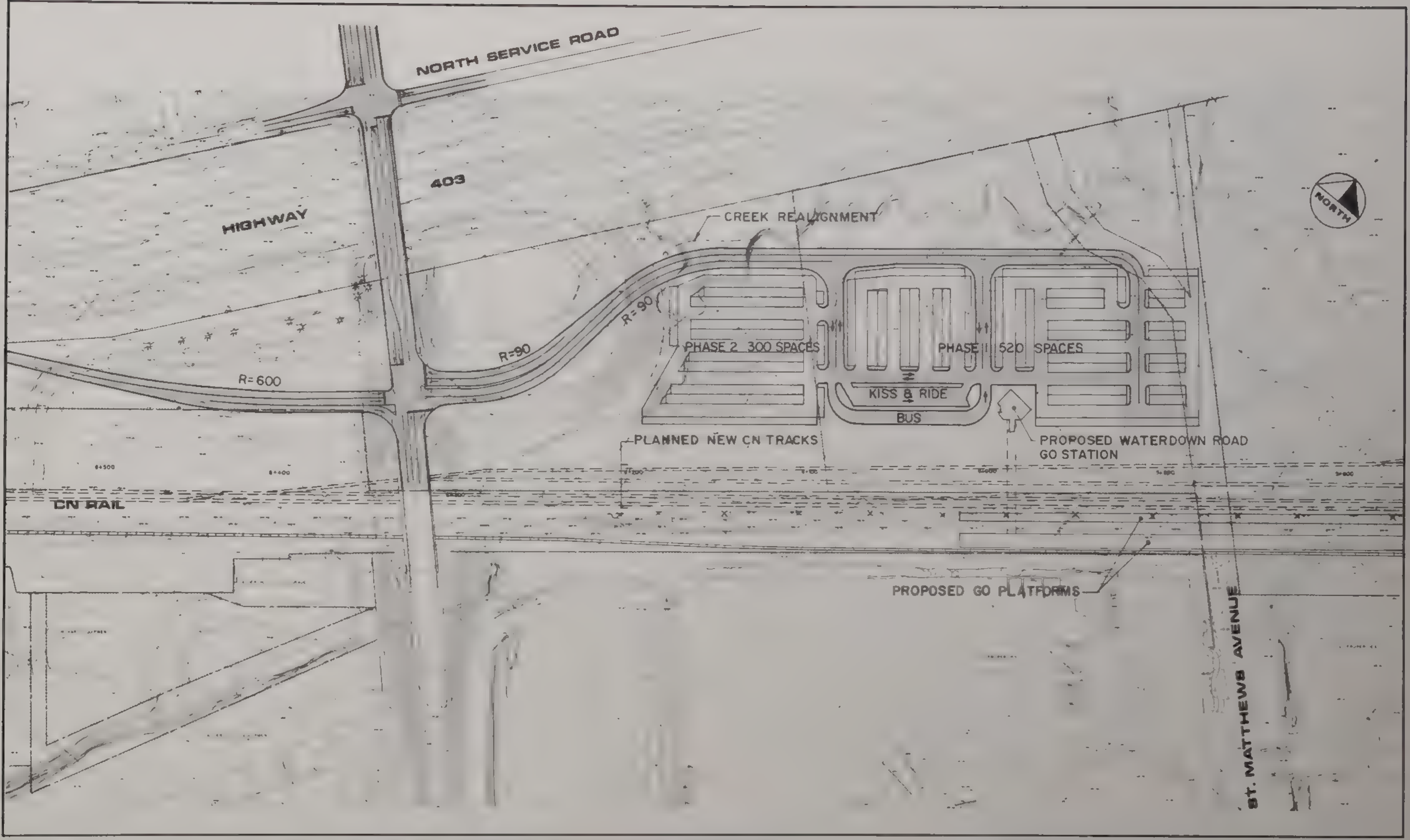

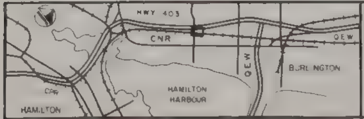

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RECOMMENDED PLAN
STA. 5+750 TO STA. 6+550

HOR 1 2000 0 50 100 150 m
VER 1 200 0 5 10 15 m

EXHIBIT
19A

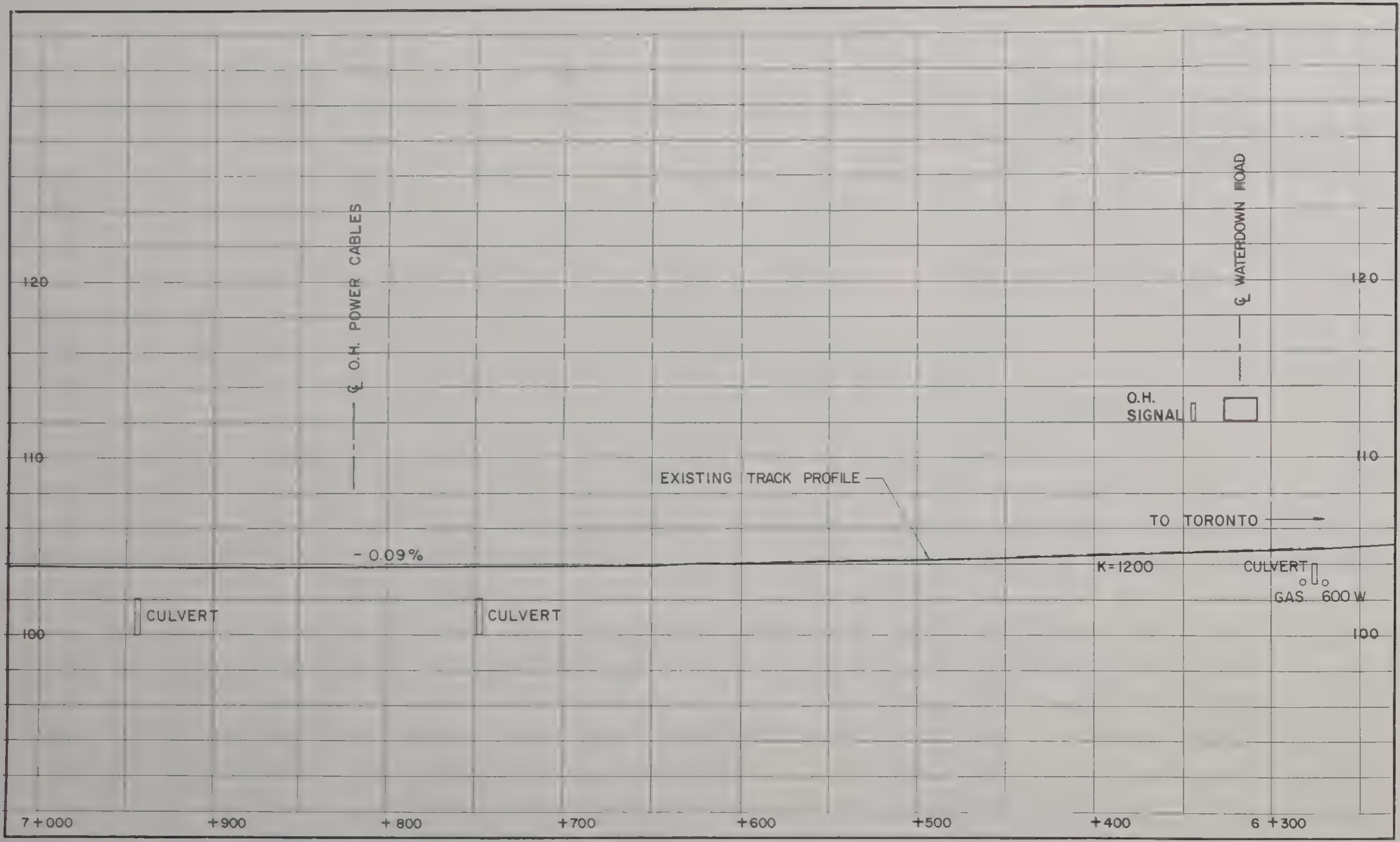

EXHIBIT
20B

RECOMMENDED PROFILE
STA. 6+240 TO STA. 7+020

HOR 2000 0 50 100 150 m
VER 200 0 5 10 15 m

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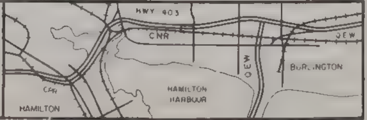

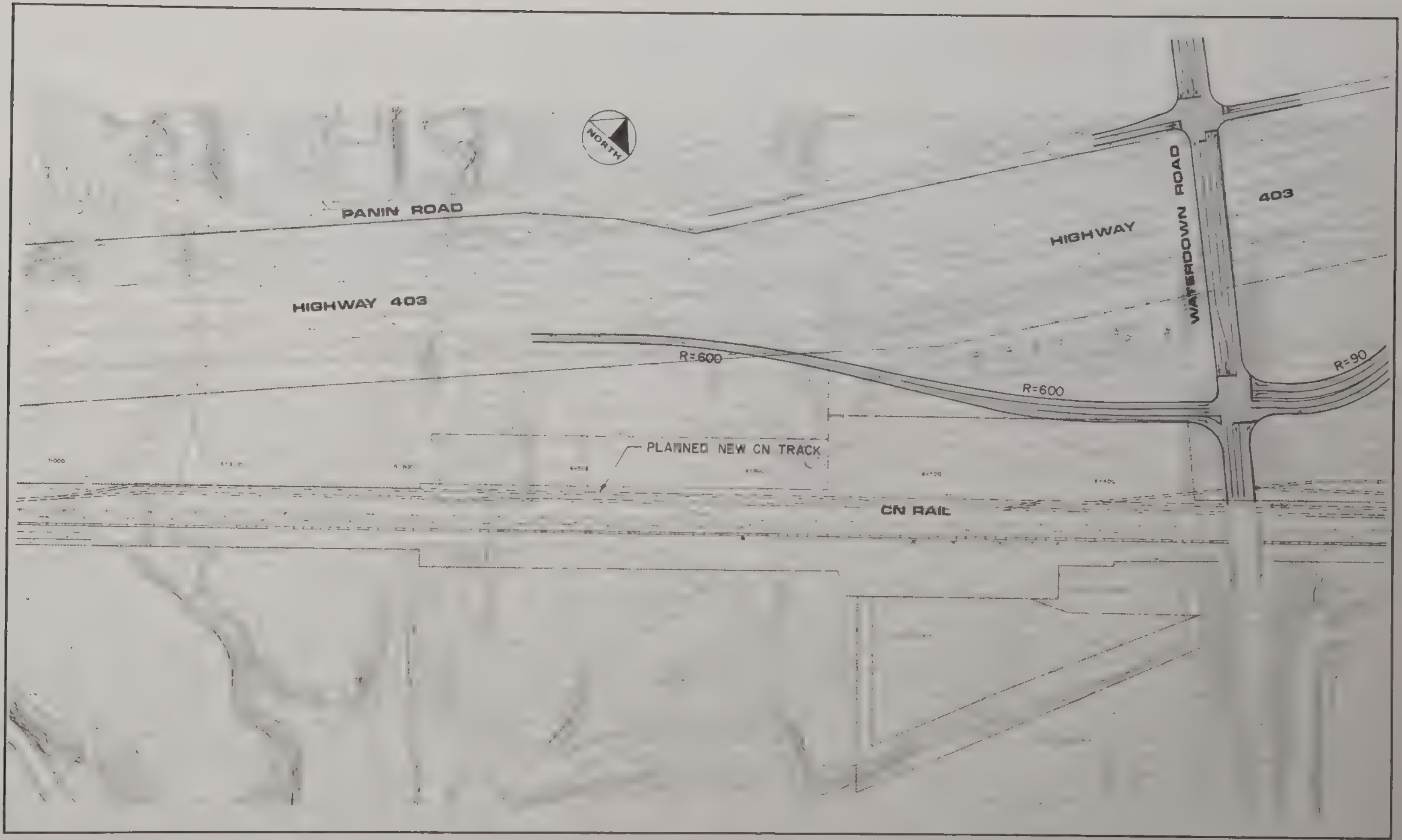

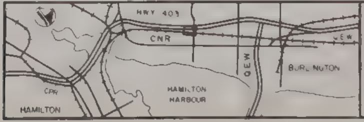

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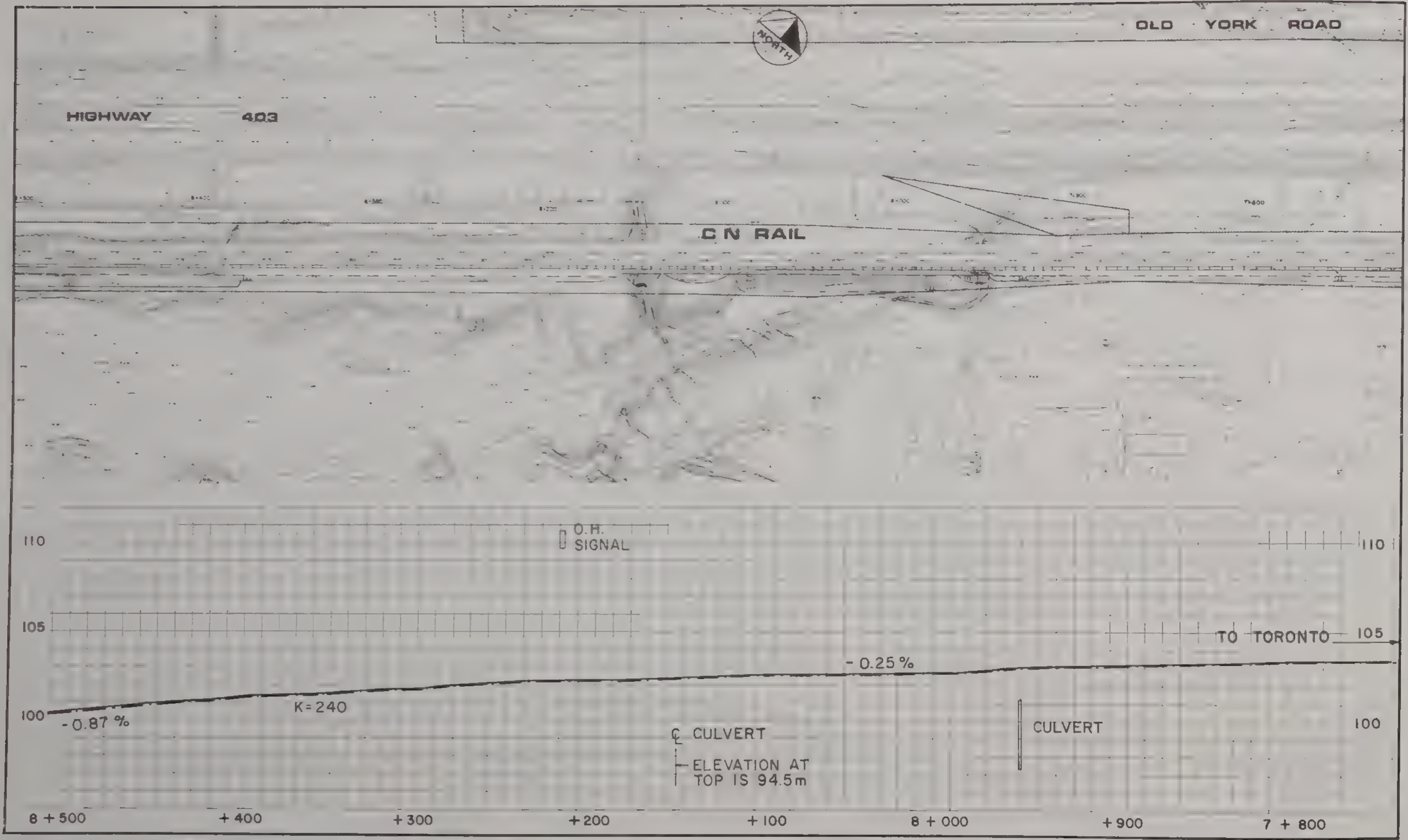
RECOMMENDED PLAN
STA. 6+240 TO STA. 7+020

HOR 2000 0 50 100 50 m
VER 200 0 5 10 5 m

EXHIBIT
20A



EXHIBIT

21B

RECOMMENDED PLAN/ PROFILE
STA. 7+740 TO STA. 8+500

HOR 1:2000 0 50 100 150 m
VER 1:200 0 5 10 15 m

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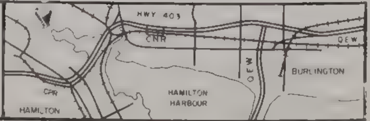

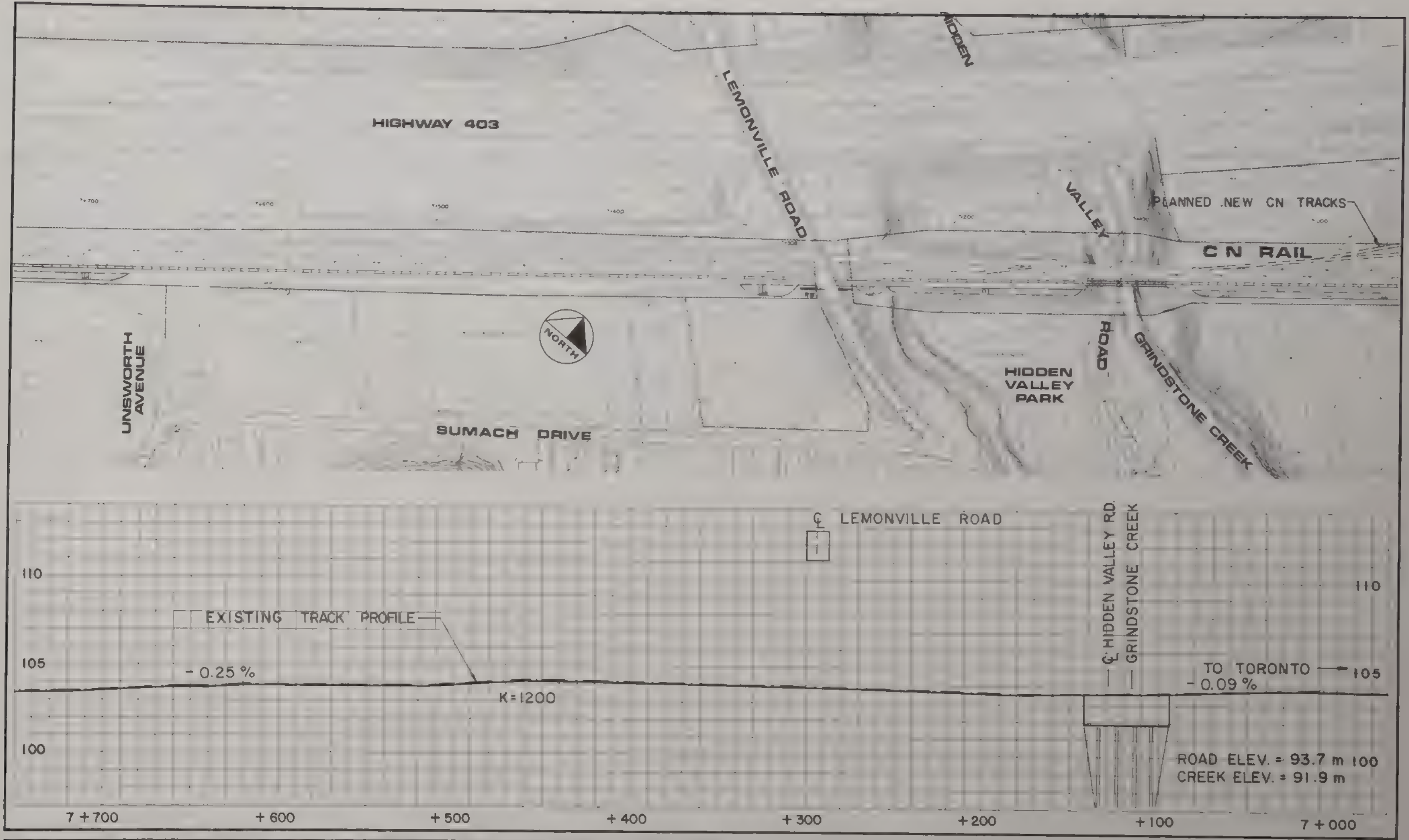

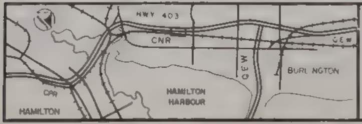

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RECOMMENDED PLAN/ PROFILE

STA. 6+960 TO STA. 7+740

HOR 1:2000 0 50 100 150 m
VER 1:200 0 5 10 15 m

EXHIBIT

21A

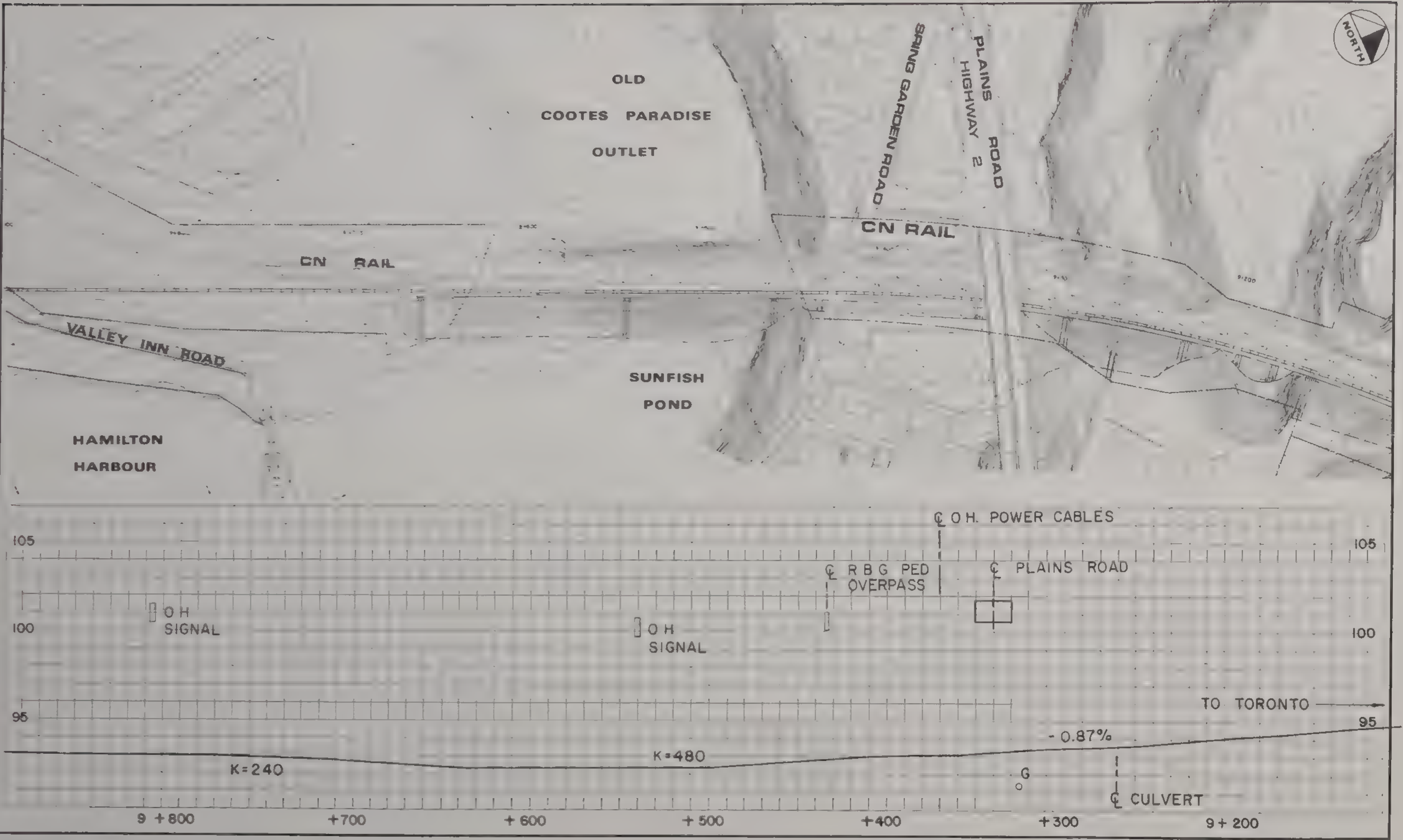

EXHIBIT
22B

RECOMMENDED PLAN/ PROFILE
STA. 9+110 TO STA. 9+890

HOR 1:2000 0 50 100 150 m
VER 1:200 0 5 10 15 m

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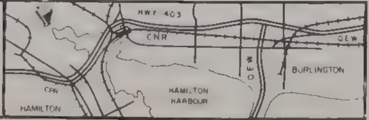

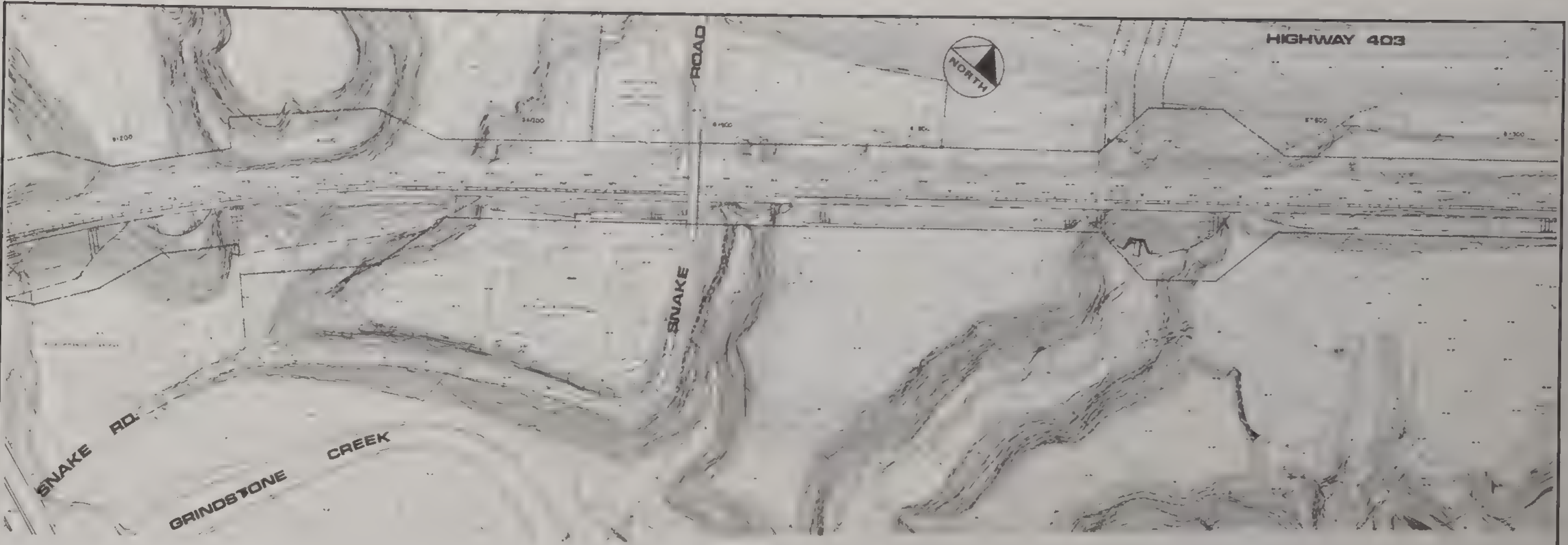

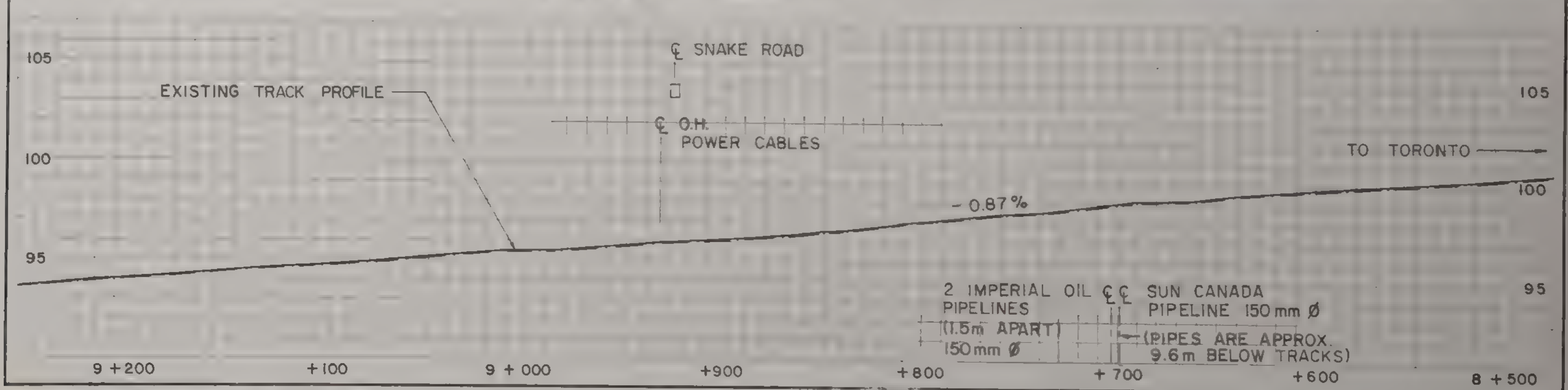

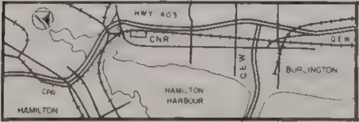

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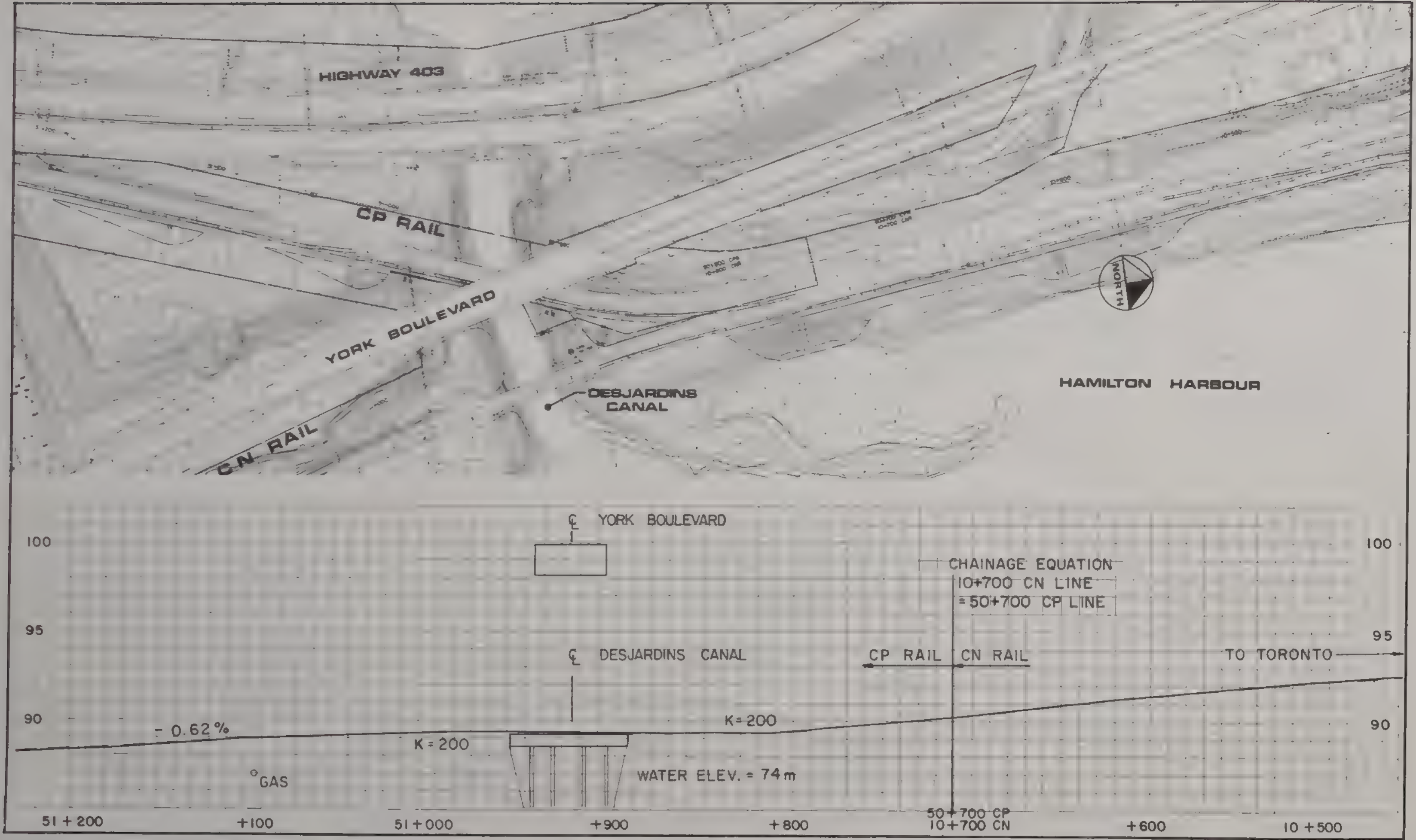
RECOMMENDED PLAN/ PROFILE

STA. 8 +500 TO STA. 9+250

HOR 1:2000 0 50 100 150 m
VER 1:200 0 5 10 15 m

EXHIBIT

22A



EXHIBIT

23B

RECOMMENDED PLAN/ PROFILE

STA. 10+450 (50+450) TO STA. 51+230

HOR 2000 0 50 100 150 m
VER 200 0 5 10 15 m

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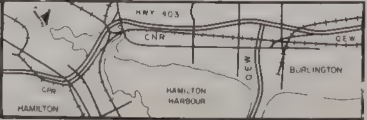

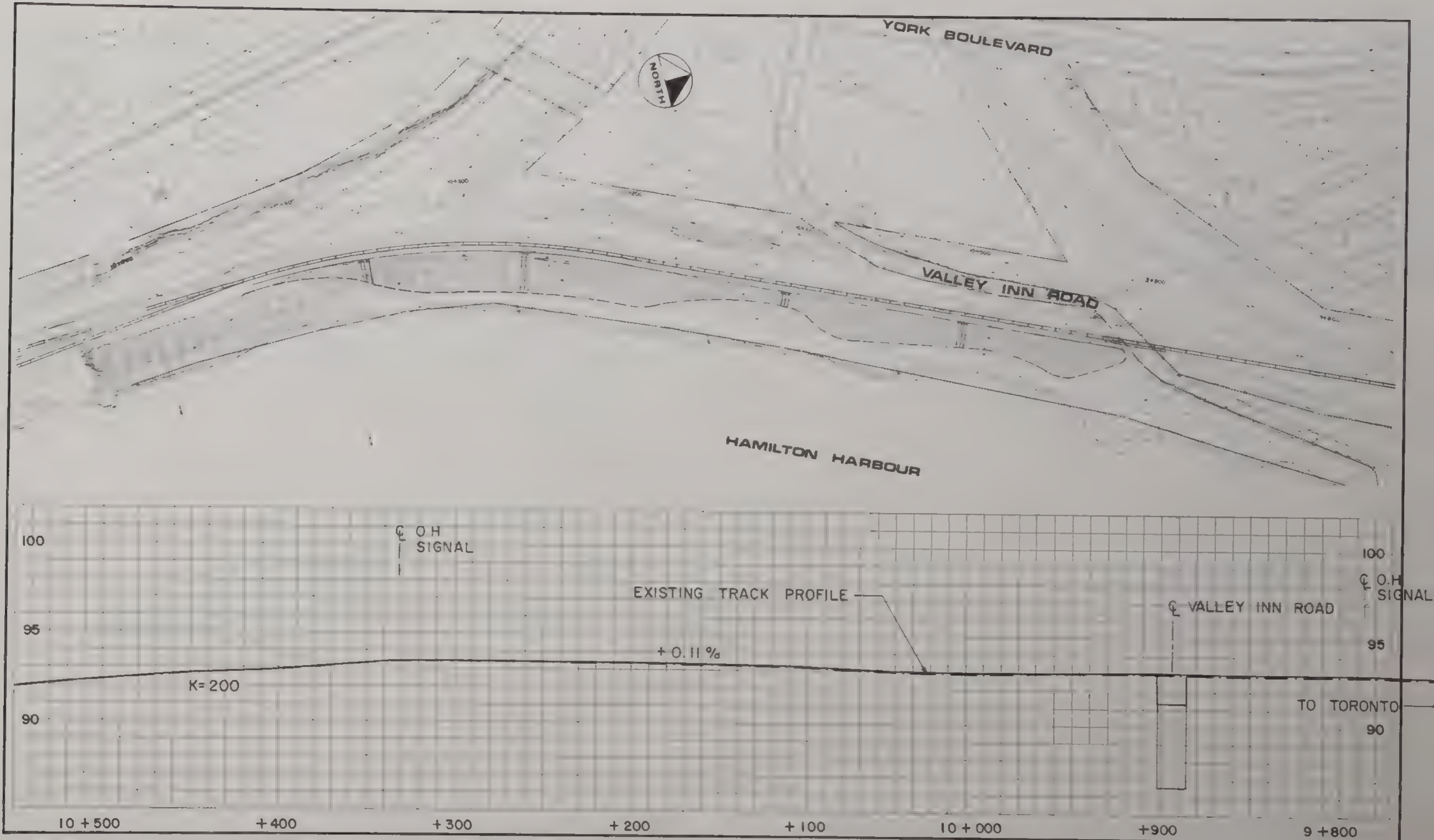

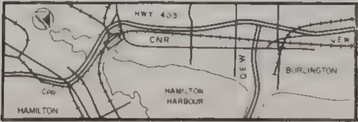

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RECOMMENDED PLAN/ PROFILE

STA. 9 + 760 TO STA. 10 + 540

HOR 1 : 2000 0 50 100 150 m
VER 1 : 200 0 5 10 15 m

EXHIBIT

23A

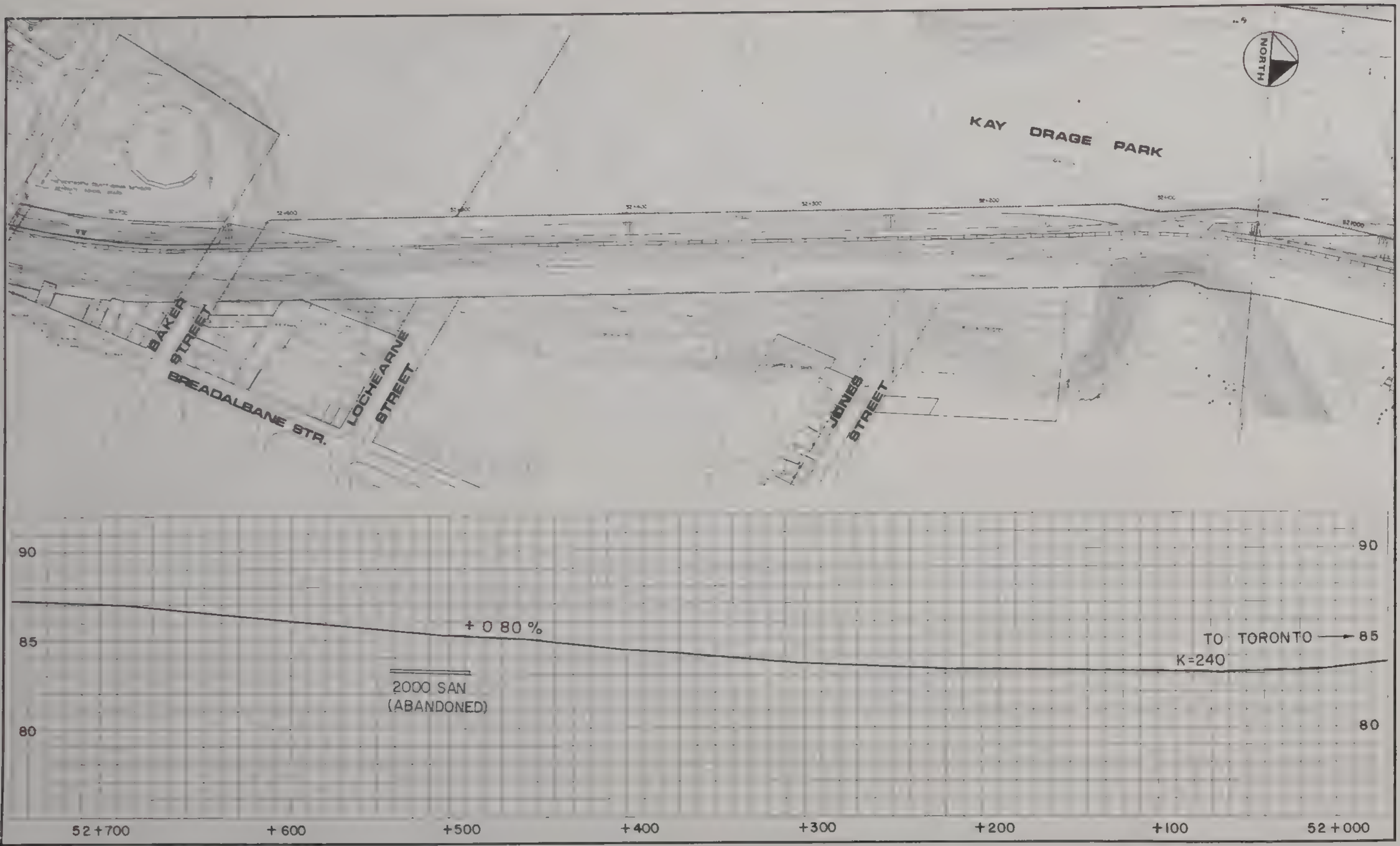

EXHIBIT
24B

RECOMMENDED PLAN/ PROFILE
STA. 51+970 TO STA. 52+750

HOR 1:2000 0 50 100 150 m
VER 1:200 0 5 10 15 m

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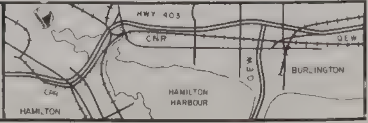

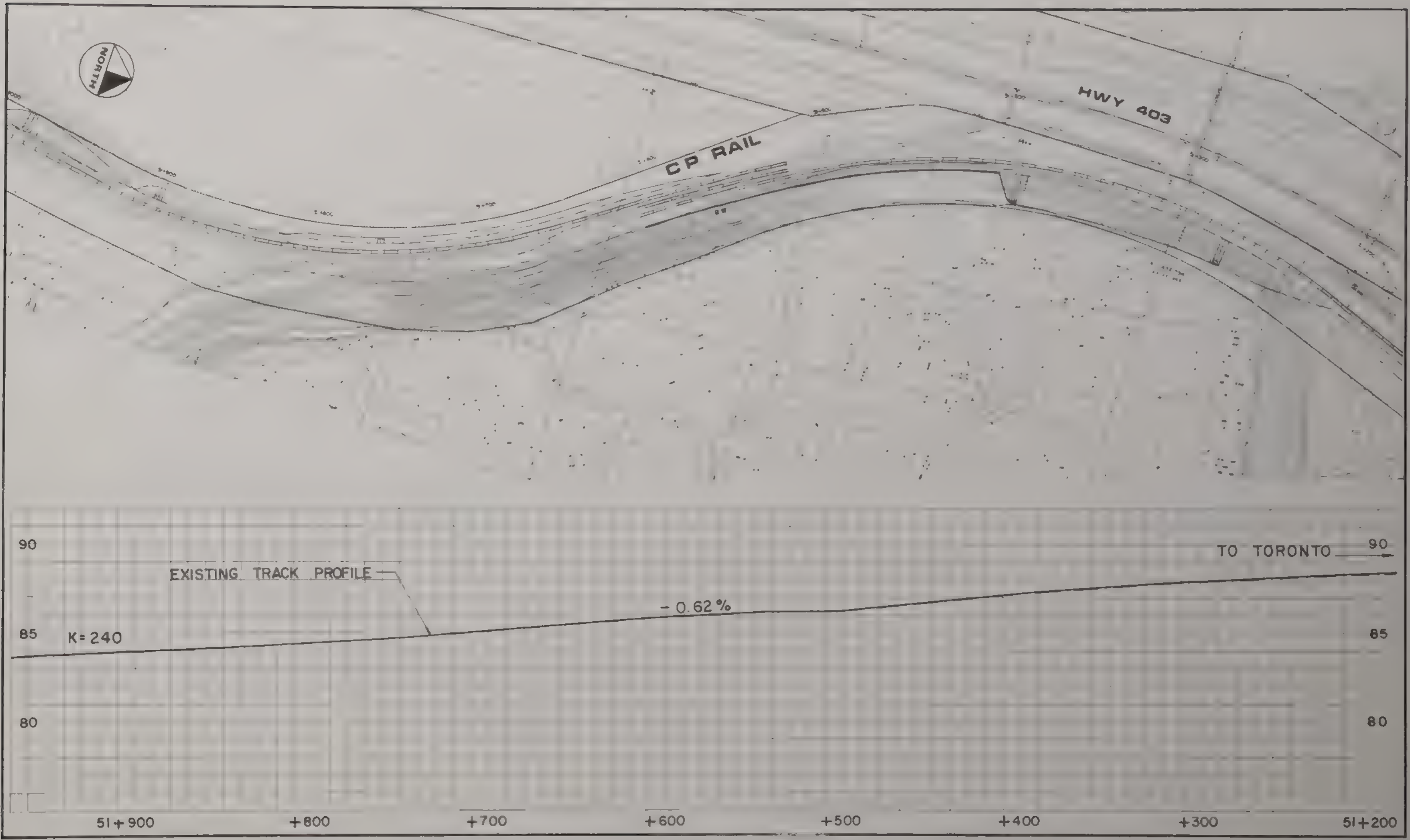

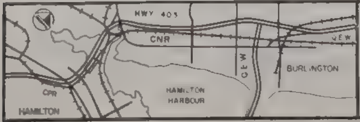

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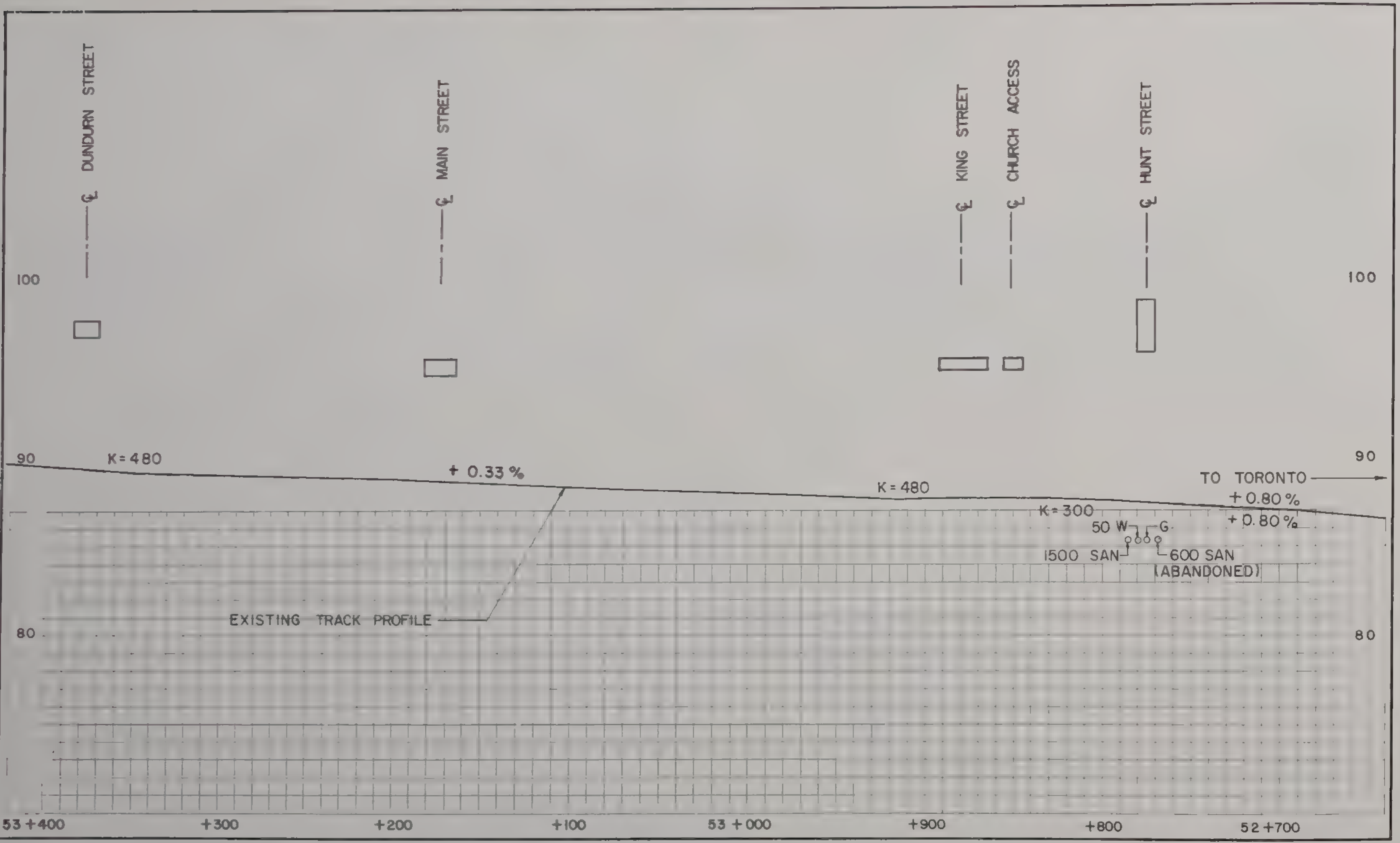
RECOMMENDED PLAN/ PROFILE

STA. 51+150 TO STA. 51+950

HOR 1 2000 0 50 100 150 m
VER 1 200 0 5 10 15 m

EXHIBIT
24A



EXHIBIT

25B

RECOMMENDED PLAN/ PROFILE
STA. 52 + 680 TO STA. 53 + 410

HOR 1 : 2000 — 0 50 100 150 m.
VER 1 : 200 — 0 5 10 15 m

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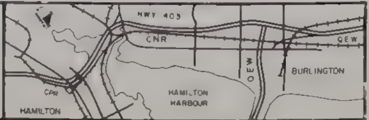
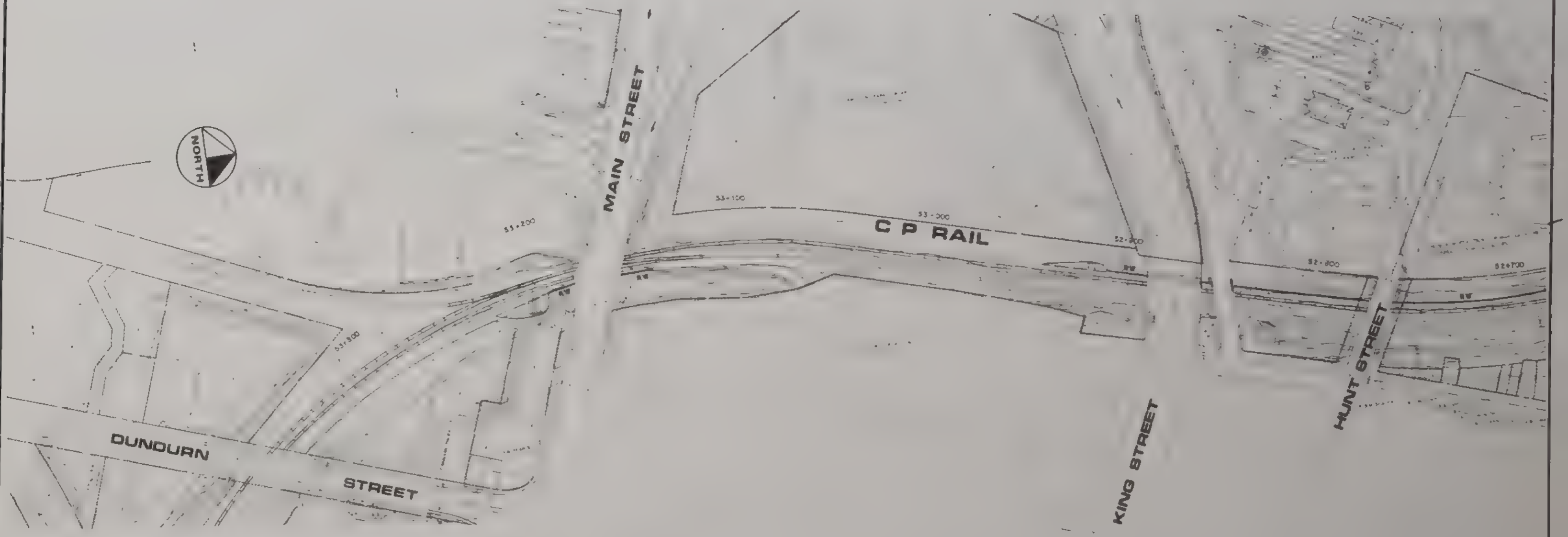
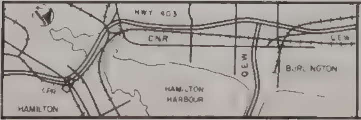
The Regional Municipality of Halton







GO TRAIN SERVICE EXPANSION PROGRAM
BURLINGTON TO HAMILTON STUDY

Ministry of Transportation
GO TRANSIT
THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH
THE REGIONAL MUNICIPALITY OF HALTON

RECOMMENDED PLAN
STA. 52+680 TO STA. 53+410

HOR 1:2000 0 50 100 150 m
VER 1:200 0 5 10 15 m

EXHIBIT
25A

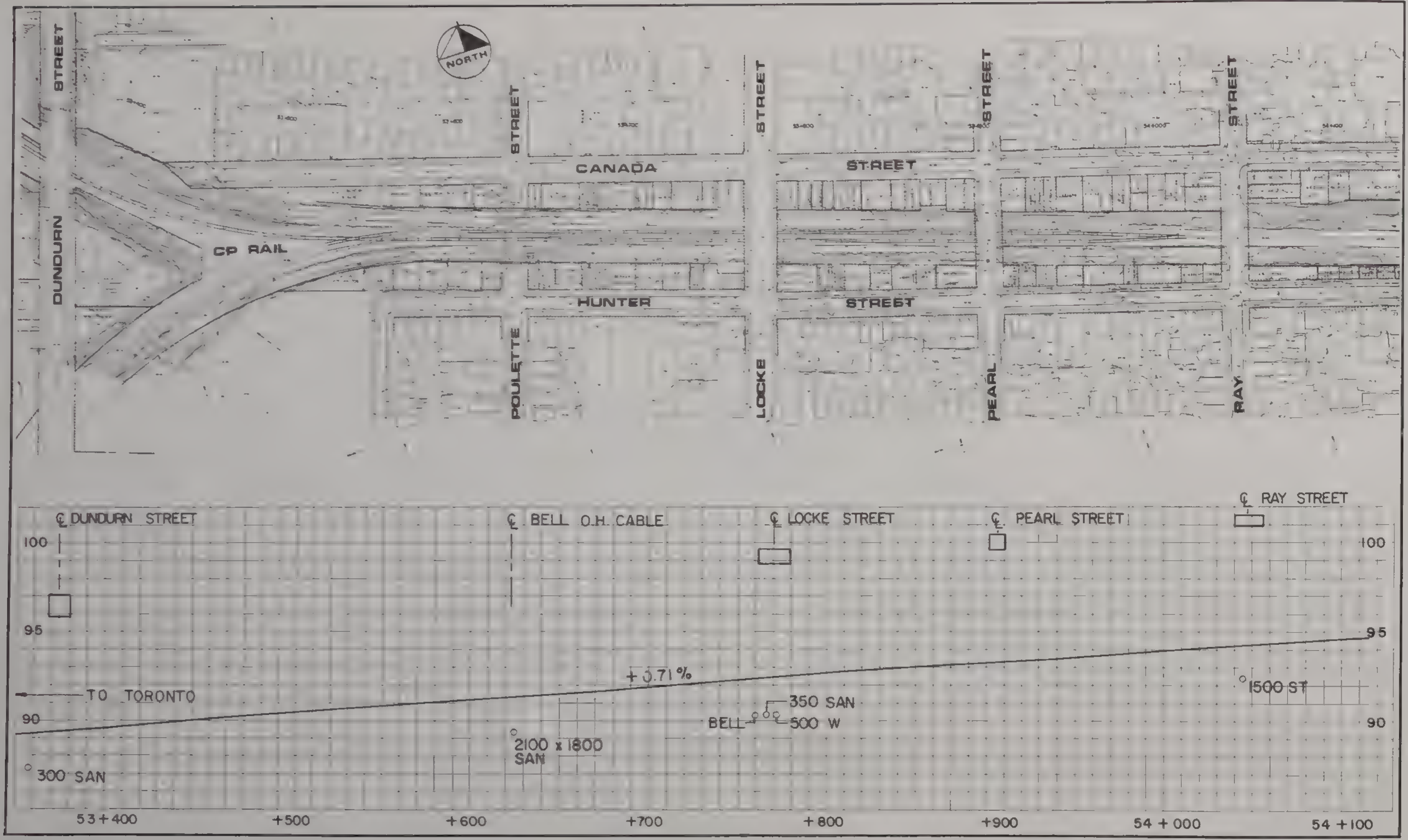


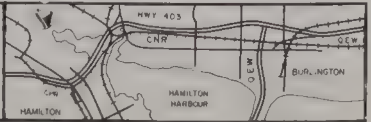
EXHIBIT
26A

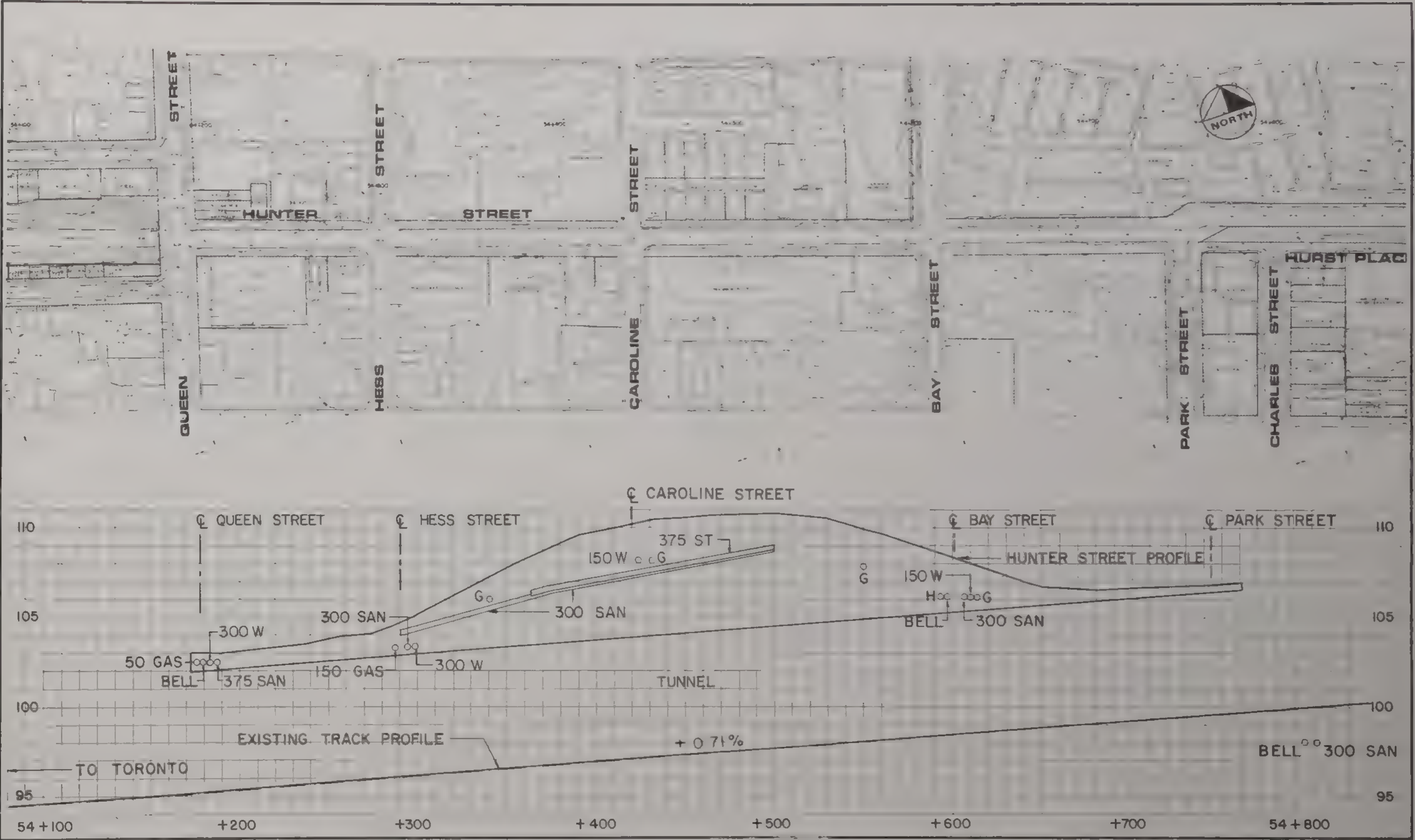
RECOMMENDED PLAN/ PROFILE
STA. 53+350 TO STA. 54+110

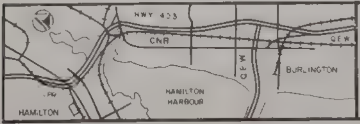
HOR 2000 0 50 100 150 m
VER 200 0 5 10 15 m

GO TRAIN SERVICE EXPANSION PROGRAM
BURLINGTON TO HAMILTON STUDY

Ministry of Transportation
GO TRANSIT
THE REGIONAL MUNICIPALITY OF HAMILTON WENTWORTH
THE REGIONAL MUNICIPALITY OF HALTON







GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

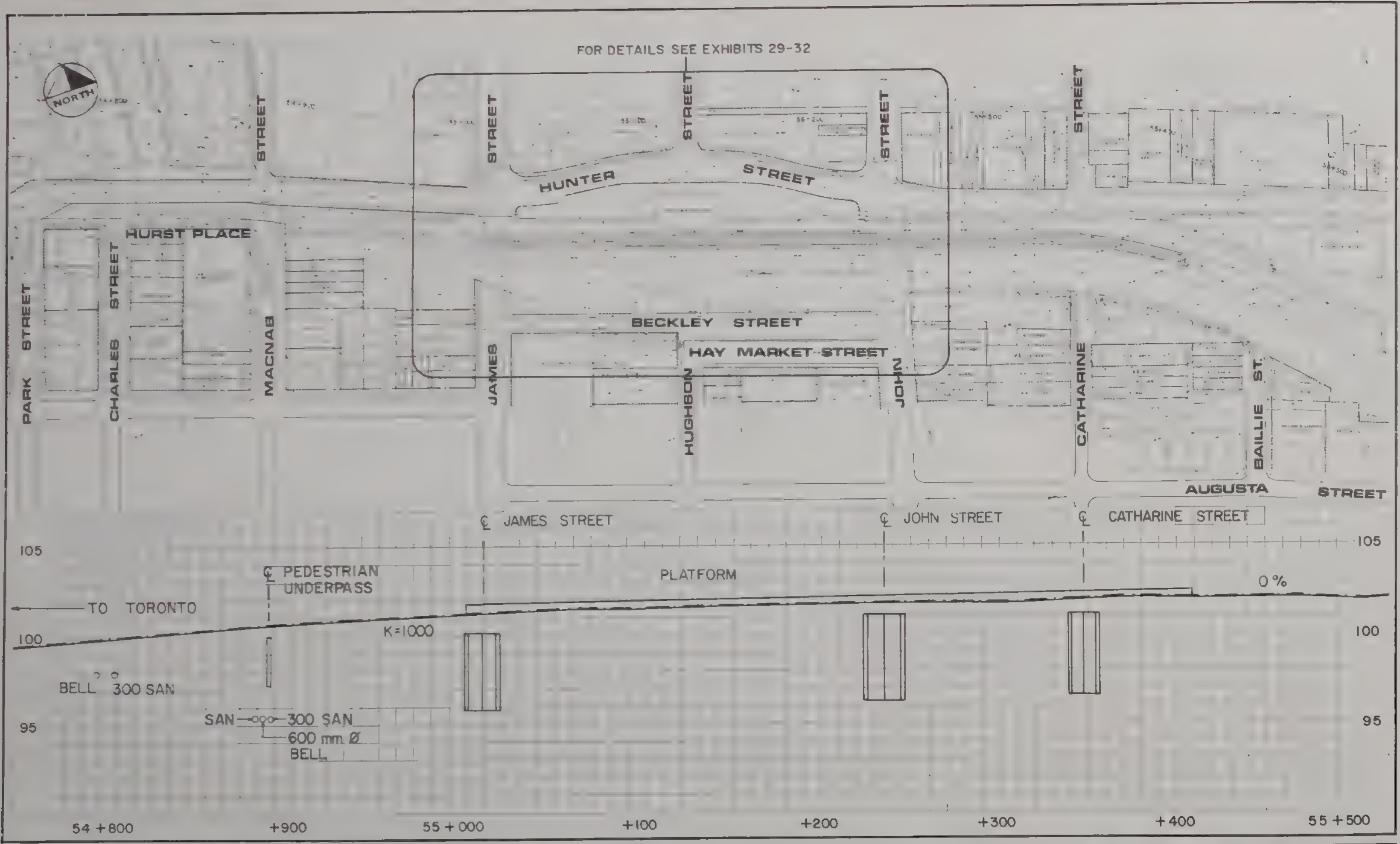
RECOMMENDED PLAN/ PROFILE

STA. 53+080 TO STA. 54+840

HOR 1 2000 0 50 100 150 m
VER 1 200 0 5 10 15 m

EXHIBIT

26B



EXHIBIT

27A

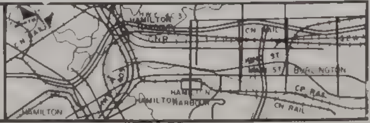
RECOMMENDED PLAN/ PROFILE

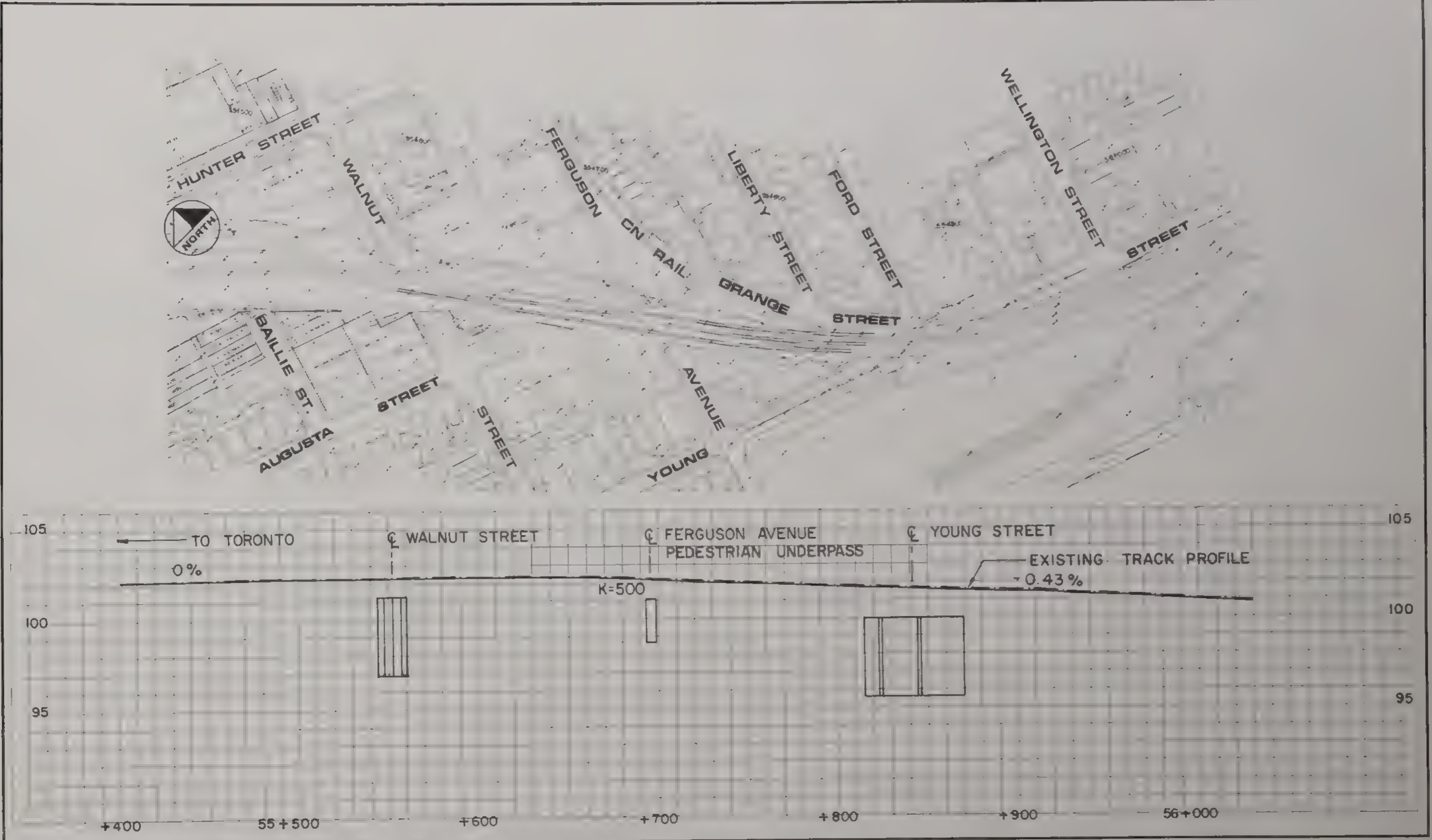
STA. 54+750 TO STA. 55+500

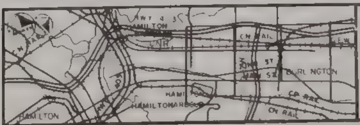
HOR 1:2000 0 50 100 50 m
VER 1:200 0 5 10 5 m

GO TRAIN SERVICE EXPANSION PROGRAM
BURLINGTON TO HAMILTON STUDY

Ministry of Transportation
GO TRANSIT
THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH
THE REGIONAL MUNICIPALITY OF HALTON







GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

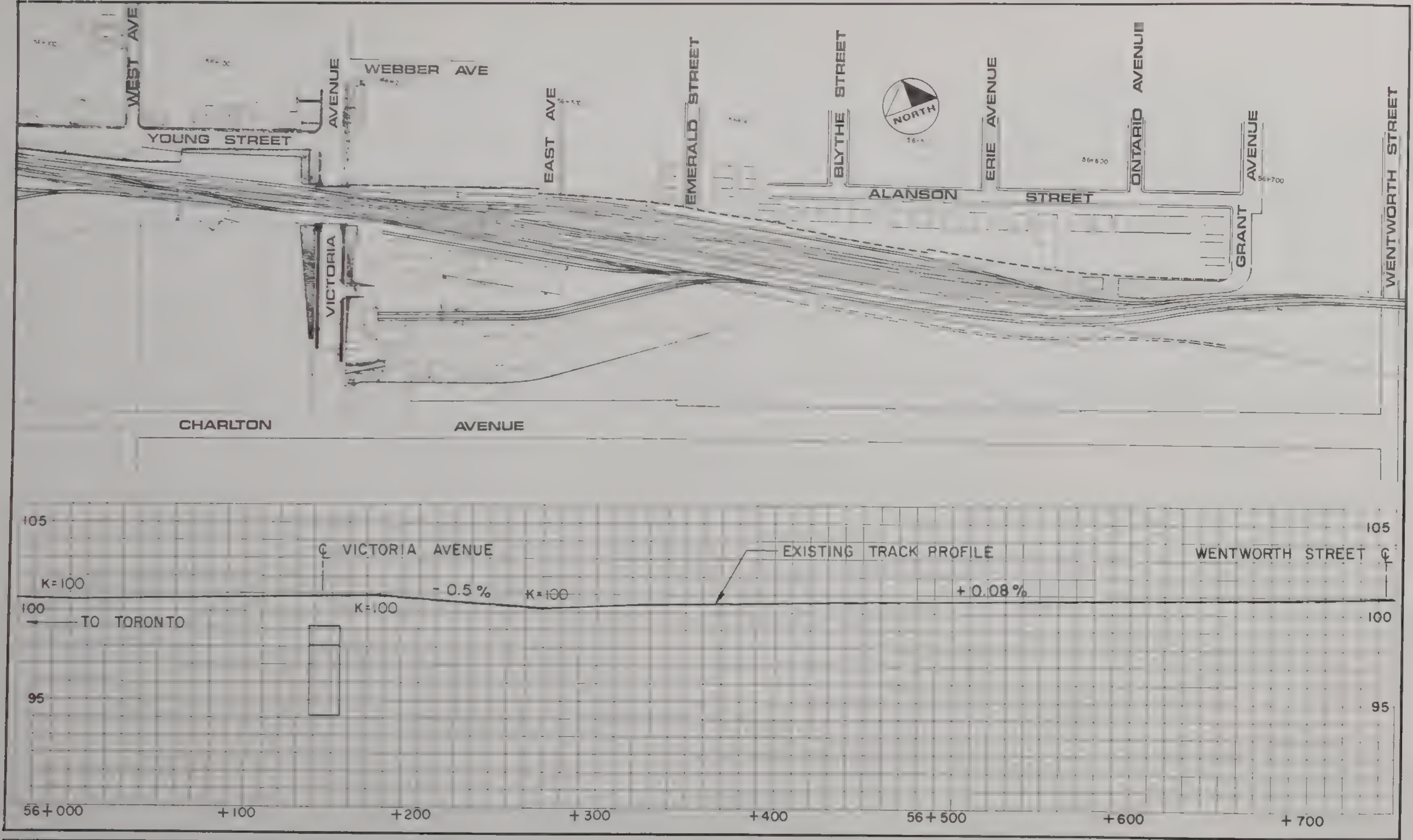
RECOMMENDED PLAN/ PROFILE

STA. 55+430 TO STA. 56+040

HOR 1:2000 0 50 100 150 m
VER 1:200 0 5 10 15 m

EXHIBIT

27B



EXHIBIT

28

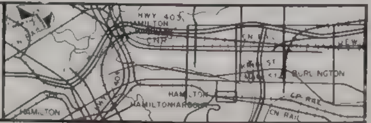
RECOMMENDED PLAN/ PROFILE

STA. TO STA.

HOR 2000 0 50 [illegible] 50 m
VER 200 0 5 [illegible] .5 m

GO TRAIN SERVICE EXPANSION PROGRAM
BURLINGTON TO HAMILTON STUDY

Ministry of Transportation
GO TRANSIT
The Regional Municipality of Hamilton-Wentworth
The Regional Municipality of Halton



6.3 Significant Features

A brief description of features of note or specific interest in the Burlington to Hamilton Project follows.

6.3.1 Station Development

The two recommended GO Train stations are intentionally very different in character, and are meant to supplement each other in serving the entire regional demand for GO Transit Service. The Waterdown Road Station with its easy access from Highway 403 and ample parking area is planned to serve all those from west of Waterdown Road in West Burlington, Hamilton and beyond who wish to drive to the GO service. The downtown Hamilton CP/TH&B Station is recommended to be revived and improved to function as the new downtown transportation terminal, bringing together commuter rail, intercity bus, local bus, and walk-in traffic at a single convenient location.

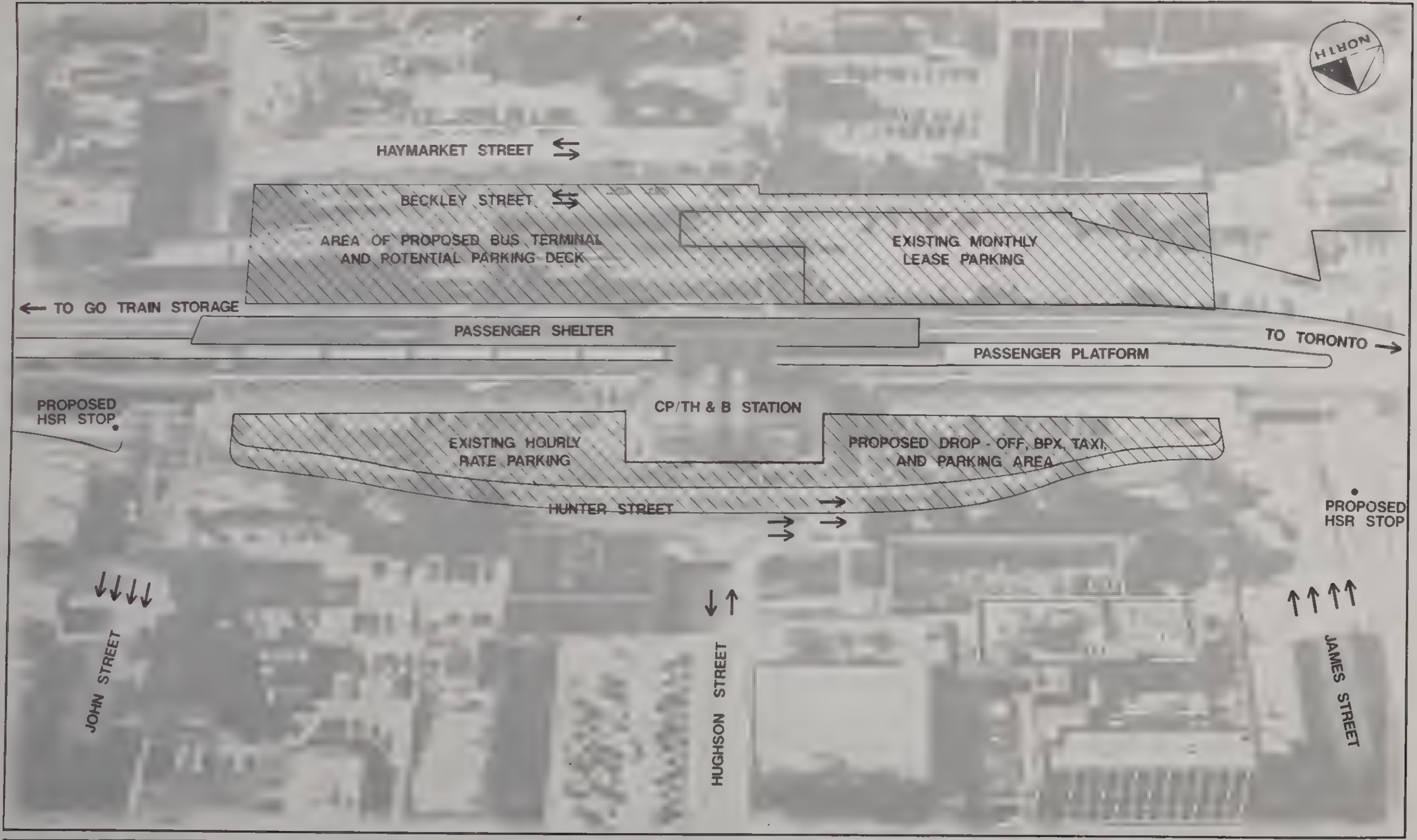
6.3.1.1 CP/TH&B Station

Section 5.6.2 documents the development of the recommendations concerning the CP/TH&B Station. A number of opportunities exist, however, for changes or refinements to the concept with the participation of private or joint-venture interests. The recommendations have been consciously limited to those that the proponent (GO Transit) is prepared to carry out within the confines of the CP Rail property. More flexible development methods may be considered following Environmental Assessment approval, on the understanding that the Station design criteria and the operators needs will not be compromised and that compliance with both commitments made within the EA report and with local development regulations would occur. Formal discussions concerning ownership of the Station and property will follow Environmental Assessment approval, but plans to this point have been prepared on the understanding with CP that the Station and area would be made available by CP Rail for GO use.

The CP/TH&B Station as redeveloped for intermodal use may be described in a number of components, as follows. Exhibit 29 illustrates the area.

a) Station Building

The station has a basement level for boilers, switches, and storage; the ground floor which, in addition to the passenger lobby and facilities has rental space for a restaurant (currently in use) and some office space; a mezzanine at track level with office space formerly used by TH&B Railroad dispatchers and operators; and four office floors and a single tower room. Each floor has washroom facilities and is served by an elevator and



EXHIBIT

29

CP/TH & B STATION AREA

(VIEWED FROM THE NORTH)

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

TRANSIT

stairs. The street-level passenger lobby, entered from Hunter Street, was designed as a train passenger facility and ticket counters, baggage rooms, and restrooms, all remain. The lobby extends under the tracks and platform, with direct stairs and ramps to the passenger platform. Some leakage and structural deterioration has occurred over the years.

The recommendations include the rehabilitation of the Station building both inside and out, and the refurbishing of the interior fixtures and services to bring the office area to a leasable standard and the lobby to an acceptable level of comfort for passengers and employees.

Bus parcel express facilities can be provided on the ground floor using former storage or office space. The passageway under the tracks that once led to the garage area and Beckley Street will be shortened and open directly onto the Bus platforms, while the stairway and ramp from the lobby to the train platform above will be retained. The combination of passageways will allow complete freedom of movement between modes, either controllable by gates or operating on integrated fare/proof of payment principles. The passenger ramp at a grade of ten percent allows wheelchair or baggage cart access to the train platform, while all other facilities are on a single level.

b) Hunter Street Face:

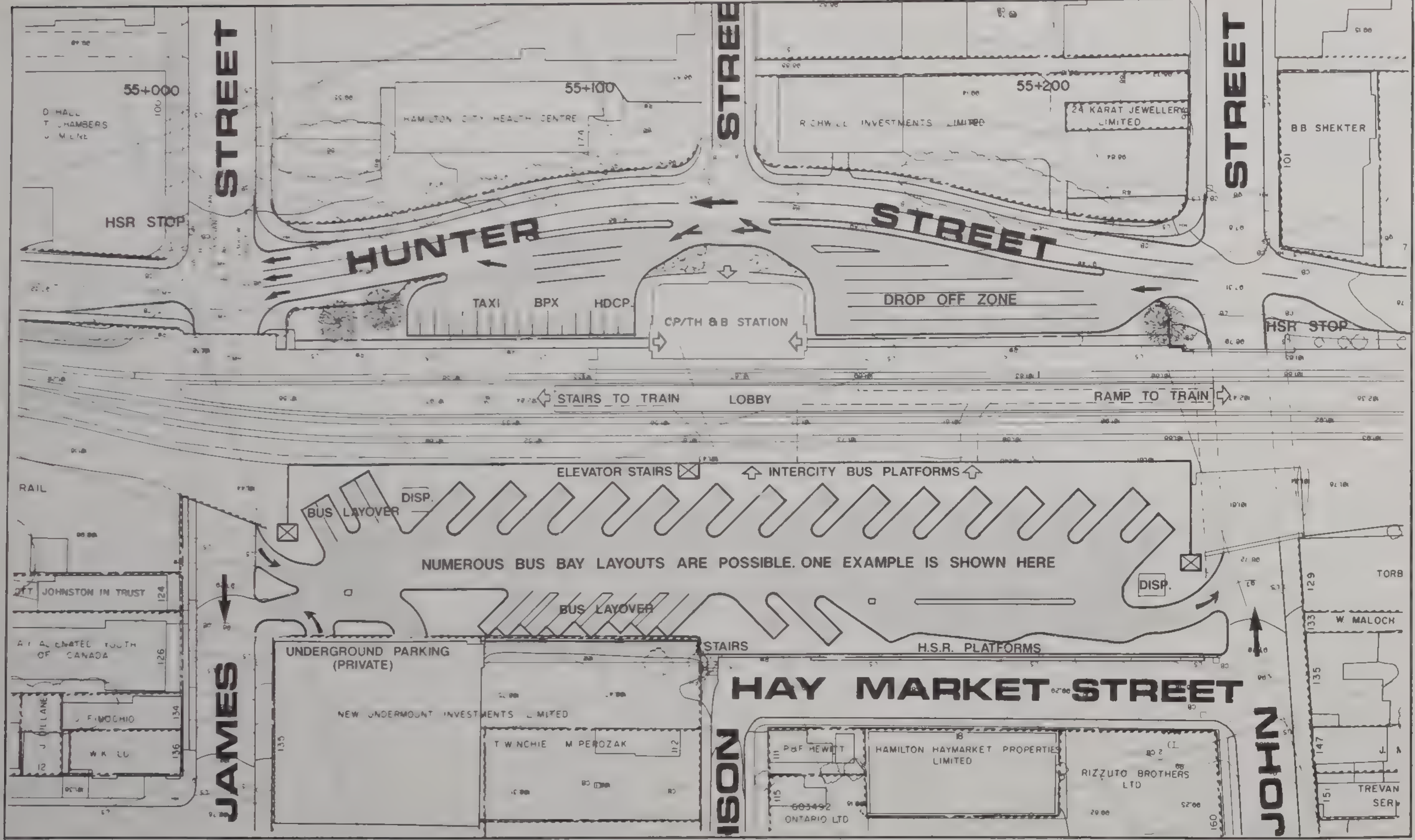
In order to maximize the usable space in front of the CP/TH&B Station for short term parking and passenger dropoff use, the removal of parking from the north side of Hunter Street between John and James Streets is recommended. The two westbound lanes of Hunter Street could then be shifted adjacent to the north curb and a curb or barrier constructed to delineate the Station parking area.

The area may be laid out to provide 6 spaces for Bus Parcel Express patrons, 4 taxi spaces, 8 short term parking spots (including handicap space designation) and up to 44 drive-through pick up/drop off slots. The areas near James and John Streets as well as directly in front of the Station building should be attractively landscaped to soften the blank wall of the railway structure and enhance the entrance to the station.

Walkways from James and John Streets along the face of the rail embankment to the lobby's side entrances may be sheltered by an attached overhang, designed in keeping with the historic and architecturally distinct style of the station.

c) Beckley Street Face:

The closure and incorporation of Beckley Street into the station property is required in order to provide adequate space for the Bus Terminal. Although not formally discussed, the concept has received acceptance by the City of Hamilton. Access in both directions between James Street and the parking garage entrances for 135 James Street South off the west end of Beckley Street are



EXHIBIT

30

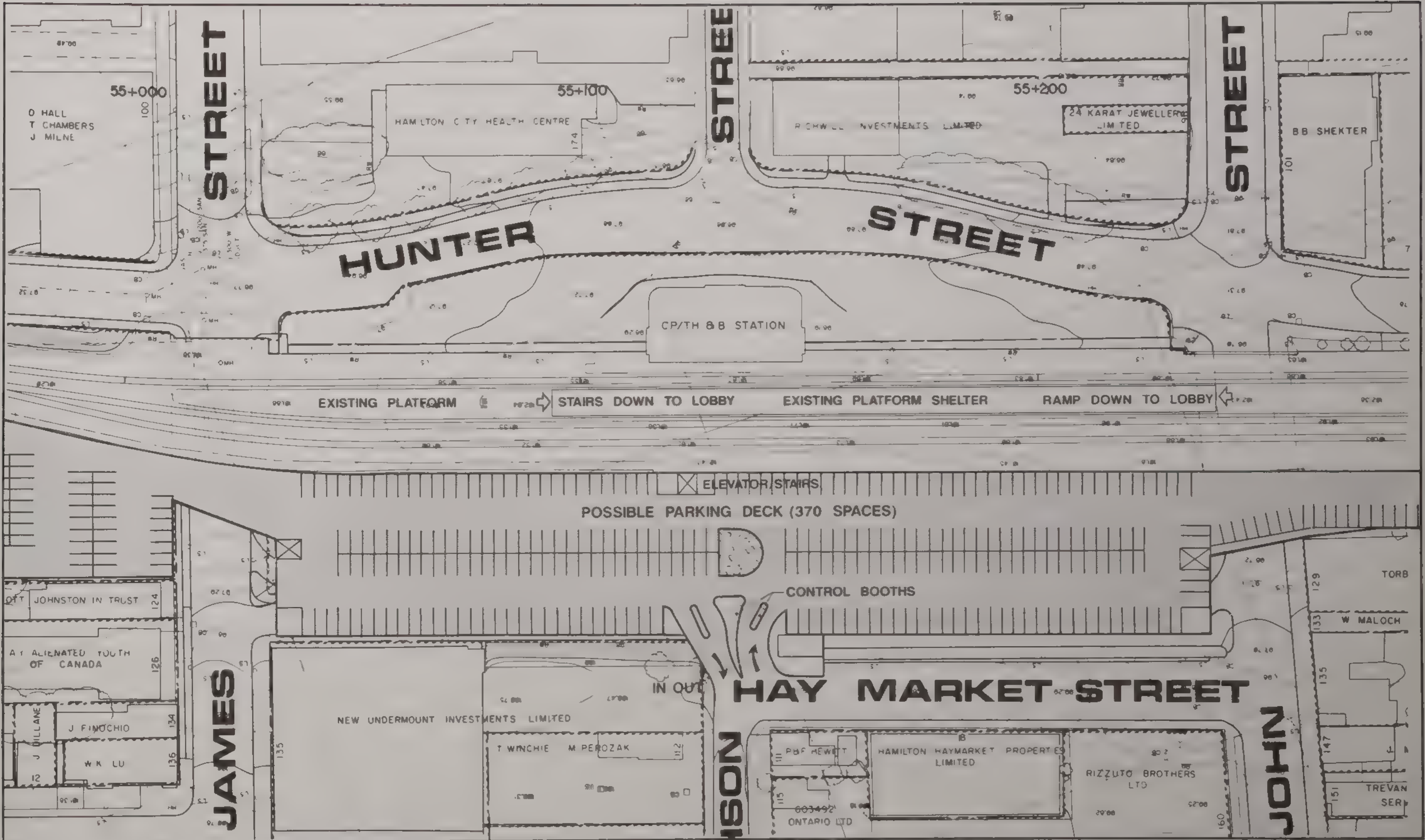
CP/TH & B STATION : STREET LEVEL CONCEPT

0 25 50 100 metres

SCALE

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY



GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

GO TRANSIT

CP/TH & B STATION : TRACK LEVEL CONCEPT

0 25 50 100 metres

SCALE

EXHIBIT

31

to be maintained and incorporated into any Station plan. The area east of Hughson Street between the tracks and Beckley Street is an open structure, with parking and storage space formerly used by the TH&B Railroad within. The western section between Hughson and James Streets is earth fill behind retaining walls. It is recommended to remove the fill and the structure from Beckley Street to within 5.5 metres of the existing south track, between the abutments of the James and John Street railway structures. A retaining wall will be built from James to John Streets 5.5 metres south of the track, and the entire section excavated to slightly below the existing level of Beckley Street.

Within the cleared area up to 18 intercity bus platforms and 10 intercity bus storage bays may be provided, along with two to four loading areas for local (H.S.R.) buses, two booths for bus dispatchers with visibility of the whole bus area, and space for vertical links (elevators, stairs) with future above or below ground levels. The bus circulation pattern involves entering from James Street southbound and exiting to John Street northbound. Bus platforms may be laid out in a number of ways, but should be drive-through or drive-in/back out for passenger service and back-in for layover. An example is shown in Exhibit 30, while the interaction of the Station with Hamilton Bus routes is illustrated in Exhibit 33.

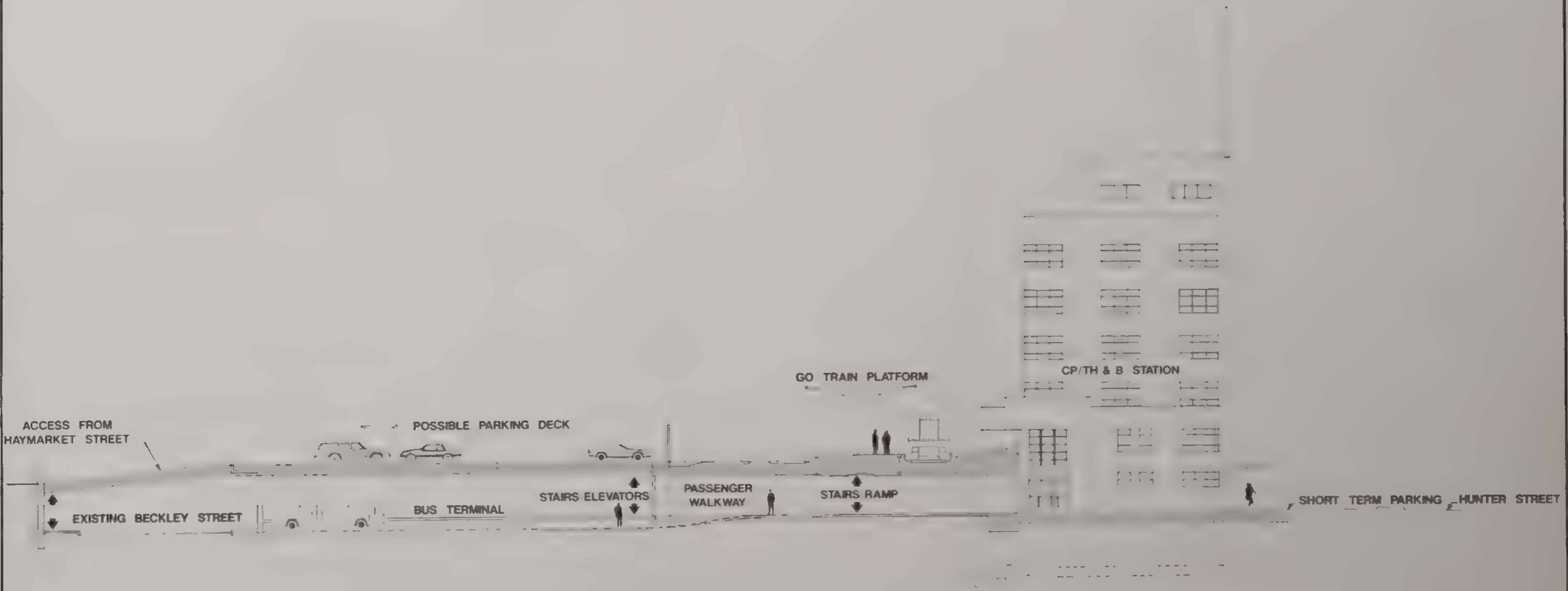
Pedestrian access may be had in a number of ways: directly from the sidewalks on James and John Streets; by stair or elevator from possible upper levels; or directly from the Station lobby through an opening in the retaining wall. Some platform layouts may entail the provision of an underground passageway between the Hughson Street/Haymarket Street corner and the basement level of the CP/TH&B station.

d) Track Level:

The existing passenger platform is a two-sided high level pad 405 metres long, and well-suited to use by GO Trains. The central section is covered and may require some rehabilitation, while outlying shelters may also be considered in detail design. The original design of the platform shelter does not allow mechanized snow removal in that segment.

A third track by-passes the platforms south of the south platform track, and would be used by CP Rail at all times.

Approximately 65 parking spaces exist at track level between James and Macnab Streets, with a single entrance from the latter. Although not proposed to be constructed by GO Transit, the opportunity exists to provide a parking structure atop the Bus Terminal south of the tracks between John and James Streets as shown on Exhibit 31. Access to the deck (at track level) would be from Hughson Street South, and allow the closure of the Macnab Street entrance to the public. A total of 370 spaces could thus be provided on one level, including 270 on the deck itself and some spaces east of John Street on vacant CP Rail property. The



GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

CP/TH & B STATION : CROSS SECTION

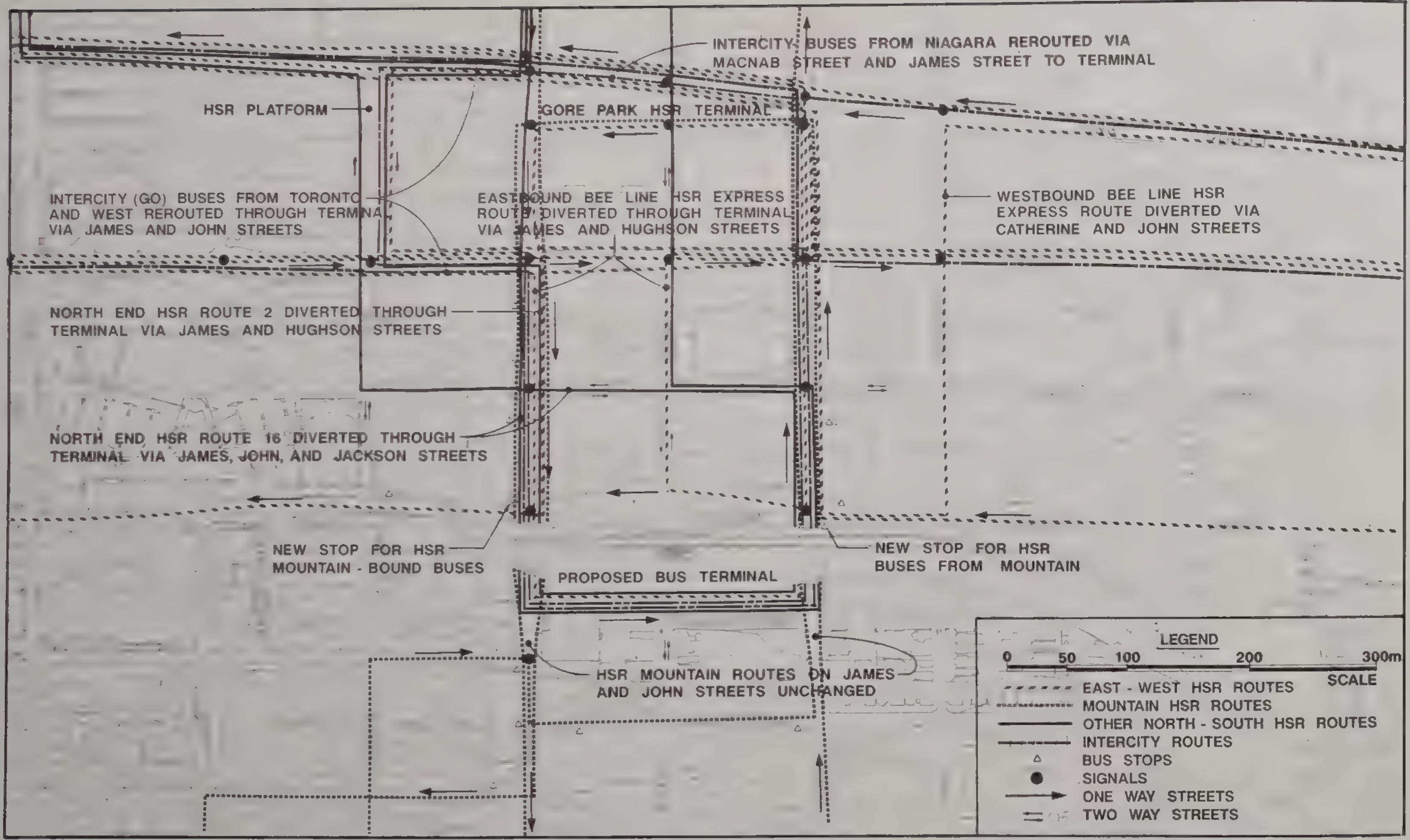
VIEWED FROM THE EAST

0 10 20 30 metres

SCALE

EXHIBIT

32


INTERCITY BUSES FROM NIAGARA REROUTED VIA MACNAB STREET AND JAMES STREET TO TERMINAL
HSR PLATFORM
GORE PARK HSR TERMINAL
INTERCITY (GO) BUSES FROM TORONTO AND WEST REROUTED THROUGH TERMINAL VIA JAMES AND JOHN STREETS
EASTBOUND BEE LINE HSR EXPRESS ROUTE DIVERTED THROUGH TERMINAL VIA JAMES AND HUGHSON STREETS
WESTBOUND BEE LINE HSR EXPRESS ROUTE DIVERTED VIA CATHERINE AND JOHN STREETS
NORTH END HSR ROUTE 2 DIVERTED THROUGH TERMINAL VIA JAMES AND HUGHSON STREETS
NORTH END HSR ROUTE 16 DIVERTED THROUGH TERMINAL VIA JAMES, JOHN, AND JACKSON STREETS
NEW STOP FOR HSR MOUNTAIN - BOUND BUSES
NEW STOP FOR HSR BUSES FROM MOUNTAIN
PROPOSED BUS TERMINAL
HSR MOUNTAIN ROUTES ON JAMES AND JOHN STREETS UNCHANGED
LEGEND
0
50
100
200
300m
SCALE
EAST - WEST HSR ROUTES
MOUNTAIN HSR ROUTES
OTHER NORTH - SOUTH HSR ROUTES
INTERCITY ROUTES
BUS STOPS
SIGNALS
ONE WAY STREETS
TWO WAY STREETS

EXHIBIT

33

CHANGES TO DOWNTOWN HAMILTON BUS ROUTES

WITH USE OF CP/TH & B STATION AS A BUS TERMINAL

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

layout of the bus platforms at the lower level must consider the structural support requirements of such a possible parking deck. Stairs and elevators linking the parking and bus levels are to be protected for. A typical cross section showing the possible developments comprises Exhibit 32.

Beyond the provision of a single track-level parking deck, opportunities exist for private or joint venture development of further parking levels, either above or below the bus platforms, or of commercial/office/residential buildings utilizing air rights above the bus and train facilities.

Further discussions will occur between GO Transit and CP Rail at the detailed design stage concerning the extent of a possible ultimate fourth track to the east of the Station. If it is necessary for this freight track to extend as far west as Hughson Street, provision for it may be made in the layout of the Bus Terminal, the design of structural supports, and/or the layout of the parking facility. The Station concepts prepared during this study have been based on the assumption that the track, if required, will terminate at John Street.

6.3.1.2 Waterdown Road Station

The recommended Waterdown Road GO Station will be a traditional on-line station, similar to most on the Lakeshore GO Train line. It will consist of two two-sided platforms with passenger shelters linked by an underground passageway to a small ticket/waiting building on the north side of the CN corridor. Parking space for 500 vehicles will be provided initially with room for ultimately 1,100 or more vehicles. Since the adjacent CN Rail property is undeveloped, an almost infinite amount of land is available for parking should demand necessitate. Exhibit 19A in Section 6.2 illustrates the possible layout of the station.

A bus loop area with facilities for the GO Hamilton-Toronto express service and local transit buses is recommended.

Access to the site is to be from a new Station Access Road, extending from Waterdown Road, where it will link directly with a relocated ramp from the west on Highway 403 at a signalized intersection. Only the portion of the roadway necessary to serve the GO Station would be funded by GO Transit, although protection of a right of way up to the CN Rail property line would be made. Although virtually no auto traffic is anticipated to access the Station to or from the east, GO Buses would use the North Service Road and the (future) Brant Street/Q.E.W. interchange in the absence of east ramps at the Waterdown Road interchange until such time as the Ministry of Transportation completes the interchange.

The interchange modifications necessary to serve the site from Highway 403 are discussed further in Sections 5.6.3 and 6.3.10.

6.3.2 Trackwork

a) General Description

The additional track in the CN and CP corridors required to allow full implementation of the technical recommendations is shown in Exhibits 15 to 28. Three basic trackwork stages correspond with three levels of GO Train service:

- a switch of GO service from the CN to CP corridor in Hamilton requires only the upgrading of existing track and signals on the CP section;
- an increase in the number of GO Trains requires a single new track in the CN Burlington corridor; and
- an increase beyond approximately double the six current daily GO Train movements requires the addition of a single new track in the CP Hamilton corridor west of the Hunter Street Tunnel.

Expansion beyond the level of service that can be accommodated by the existing Hunter Street Tunnel (i.e. in the order of twenty daily GO Trains - ten each way) would require the reconstruction of the Tunnel and is not part of the current study's recommendations.

The total additional track required throughout the corridor is discussed in this section, as representing a "worst case" scenario. Although tracks already exist along the route, further trackwork is planned by GO and CN prior to and separate from the implementation of improved Burlington-Hamilton GO service. This work is part of the expansion of "full" GO Train service from Oakville to Burlington and chiefly involves the reconstruction of the Aldershot Yard. CN yard activities at the Burlington GO Station will be displaced by the expansion of GO service from Oakville, and the reconstruction and expansion of the Aldershot Yard by 1992 will be necessary to allow the relocation of the CN activities there.

The five existing Aldershot Yard tracks are planned to be removed and replaced by a set of three Receiving and Departure tracks and six Classification tracks. The R & D tracks and a Class lead track will extend from approximately King Road to Waterdown Road north of the existing main lines, and the remaining Class tracks will be located north and west of the existing yard tracks. A single yard lead will extend east to the Q.E.W. crossing, while two tracks extend as far west as Hidden Valley.

All this trackwork will be carried out by CN prior to the expansion of service to Burlington (currently scheduled for 1992) and is therefore assumed to be in place at the time of expansion between Burlington and Hamilton. As noted above, this track work is not related to the GO expansion between Burlington and Hamilton.

Also currently underway and assumed to be in place in 1989 is the addition of a second (south) platform at the Burlington GO Station. This involves some track realignment at the Station and, once complete, will allow VIA Rail Canada to shift its Burlington stop to the GO Station. The Burlington West VIA Station will then be retired and either removed or used in another capacity. This station upgrading is also not related to the expansion of GO service between Burlington and Hamilton.

With these changes in place, a description follows of the trackwork required for the full implementation of the recommendations for expansion of GO Train service between Burlington and Hamilton. It should be noted that all CN, CP and GO figures have been provided in imperial units, and are soft converted for use in this report. It should also be stated that the track recommendations have been developed at this feasibility level in co-operation with CN and CP Rail, but the railways reserve the right to modify the plans at the detailed design stage to reflect the exact schedule and trackside needs in place at that time.

b) CN Burlington Corridor

The addition of a single new track in the CN corridor between Burlington Station and Hamilton Junction is required for any expansion in GO Train service. A new track, offset 3.96 m (13') to the south of the existing south CN main line, is recommended to extend westward from the south platform track of the Burlington GO Station at Station 1+600, just east of West Rambo Creek. Realignment of the CN Rail Beach Spur at the wyes both east and west of Brant Street will be required. The new south track will utilize the existing Brant Street and Q.E.W. structures, but will necessitate the widening of the Plains Road crossing. The new track will cross King Road at grade, adjacent to the existing level crossing.

A set of reverse curves between Gallagher Road and Waterdown Road (5+400 to 6+300) will allow the south track to swing out and around the recommended Waterdown Road GO Station. A 10.67 m (35') distance between the tracks will allow the provision of a 7.32 m (24') wide platform there. In order to reduce the amount of track realignment needed at the platform and to allow the location of the platform as far to the west as possible, the tapering of the platform to a minimum of 4.88 m (16') at each end is recommended. These tapers would thus allow the new track to be laid in a single long curve at the platform, with the platform reaching its 24' maximum width only in the middle. This curvilinear alignment improves the comfort of passengers on trains (VIA, Amtrak) that may use the south track without stopping at the GO Station. A right hand switch in the vicinity of the Q.E.W. and a left hand switch near Lemonville Road would allow freight train movements between the new track and the Aldershot Yard.

West from Waterdown Road, the recommended single track would continue on the south side, utilizing the existing Waterdown Road, Lemonville Road, Snake Road, and Plains Road structures and an addition to the existing span at Hidden Valley. The spur track serving Aldershot Cold Storage just west of Waterdown Road has not been used in a number of years, and would be removed to allow the construction of the new mainline.

West of Plains Road, the new track will pass under the Spring Garden Road pedestrian span and over a widened rail embankment to Valley Inn Road, where the structure must be widened to allow the third main line to pass over the roadway. The new track will then tie back into the existing CN main line just north of the Desjardins Canal crossing, and two right hand switches between Valley Inn Road and the canal will link the new CN track with the far CN main line. A new track will then split off the main line north of the canal and parallel the two CP tracks as they diverge towards downtown Hamilton.

c) CP Hamilton Corridor

Throughout the CP corridor, the existing tracks, ties, and ballast must be upgraded and replaced as necessary, and a new signal system installed prior to introduction of GO Train service on the route. Expansion to two-way or off-peak GO Train service will at some point, depending on exact schedules used, require the addition of a new track on the CP line between Hamilton Junction and Ray Street.

The new main line will require the widening on the east side of the CP Desjardins Canal structure. The new track will stay on the east side of the existing main lines around the bend of the Hamilton Cemetery, due to the lack of space on the west side both at the Canal (under the arch of the High Level Bridge) and between Highway 403 and the tracks at Station 51+300. As soon as these constraints are passed, however, the new track will shift to the west side of the CP tracks (at 51+600). This shift is accomplished through linking the new east track to the existing east main line, linking the east main line to the west main line, and the west main line to a new west side track, as shown on Exhibit 24.

The new track will extend to Main Street, necessitating the reconstruction of the King Street and Church Access structures, but not affecting the Hunt Street span. At Main Street, the two existing main lines merge and cross over one another; one track leading to Aberdeen Yard and the other towards the Hunter Street Tunnel. Accordingly, the new third track would merge with the existing west track, and both the west and east tracks would extend around the curve to Dundurn Street (see Exhibit 25A) while the Aberdeen yard link is reconnected to both lines. Since the Main Street structure can only accommodate two tracks, the merging of the third track just to the north of it would eliminate the need for the structure's replacement.

Between Dundurn and Poulette Streets, the twin tracks from Main Street will blend with the twin Aberdeen Yard leads and head east towards the Hunter Street Tunnel in a deep cut lined by residences. In order to minimize the impact on the area and eliminate the need to reconstruct the two-track Locke Street spans and Pearl Street, the two tracks should be centred in the right of way. Although the ultimate expansion of GO service beyond the approximate 20 train level would likely involve a three track facility between Poulette Street and the Tunnel, such work would involve the reconstruction of the Locke Street structure, twinning of the Hunter Street Tunnel, and lowering the trackbed to provide increased vertical clearance for possible ultimate electrification. Accordingly, it is assumed that the new tracks proposed at this stage would ultimately be completely reconstructed in any case and need not be constructed as a stage of the ultimate alignment, particularly as the expansion beyond the currently recommended level of service will not likely occur in the foreseeable future.

The merging of the twin tracks west of Ray Street to allow the retention of the single-track structure there is recommended, on the basis that reconstruction of the Ray Street span would therefore be unnecessary prior to the ultimate reconstruction of the Hunter Street Tunnel.

Apart from track and signal upgrading, no trackwork is required through the Hunter Street Tunnel and CP/TH&B Station area. East of Walnut Street, however, some track realignment is necessary to provide a direct link between the Station and the recommended Victoria Avenue GO Train storage yard. Currently, two platform tracks and a through track are provided at the CP/TH&B Station. At the west end of the yard, the CN Rail Ferguson Avenue line curves north and two CP lines link with the Station area. The abandonment of the Hagersville Subdivision by CN (now underway), including the Ferguson Avenue track, would allow the direct linking of the two approaches. New trackage would be required between Walnut and Young Streets as well as some regrading of the former CN portion of the line (see Exhibit 27).

A complete realignment of the CP main lines and reconstruction of the Victoria Avenue Yard as a GO Train storage facility is recommended between Victoria Avenue and Wentworth Avenue. The yard facility is described in detail in Section 6.3.5 and can be seen on Exhibit 28.

6.3.3 Structures

The additional track required through most of the rail corridor for the implementation of the full recommendations will affect a number of structures on the route. Although the more recent structures have been designed to allow additional tracks, at least six of the older crossings will require either widening or complete reconstruction. It should be remembered that the incremental nature of the recommended track addition means that a certain increase in level of GO service can be achieved without affecting the CP Hamilton structures at all, while any increase in the number of trains will require new spans on affected CN structures. All the crossing structures on the recommended route are shown in Exhibits 34 - 41, along with any needed structural work, while each is described below.

Since a number of structures to be reconstructed are almost a century old, CN or CP Rail may wish to take the opportunity to completely reconstruct some of the existing spans at the same time as they are expanded. Such work is beyond the scope of this report and not the responsibility of GO Transit, but may become subject of discussions between GO Transit and the railways during the detailed design stage.

a) Brant Street

The existing rail deck is capable of accommodating the recommended new south track without any structural modifications (see Exhibit 34).

b) Plains Road East

An additional deck must be added to the south side of the skewed structure to support a new track (see Exhibit 34).

c) Queen Elizabeth Way

The existing set of Q.E.W. structures were designed to span six main line tracks, and can readily accommodate the new south track with no structural changes (see Exhibit 35).

d) Waterdown Road

The new south main line will replace the existing industrial spur and therefore have no impact on the Waterdown Road structure (see Exhibit 35).

e) Hidden Valley

A set of pier foundations to the south of the main line were provided as part of the original structure and may be utilized by new piers to support an additional south deck. The bridge abutments will need extension to support the deck. The new span should be designed to allow a standard 4.65 m clearance over the roadway below (compared to the dangerous 2.54 m of the existing girders) and to not preclude the eventual replacement by CN Rail of the existing two track span (see Exhibit 36).

f) Lemonville Road

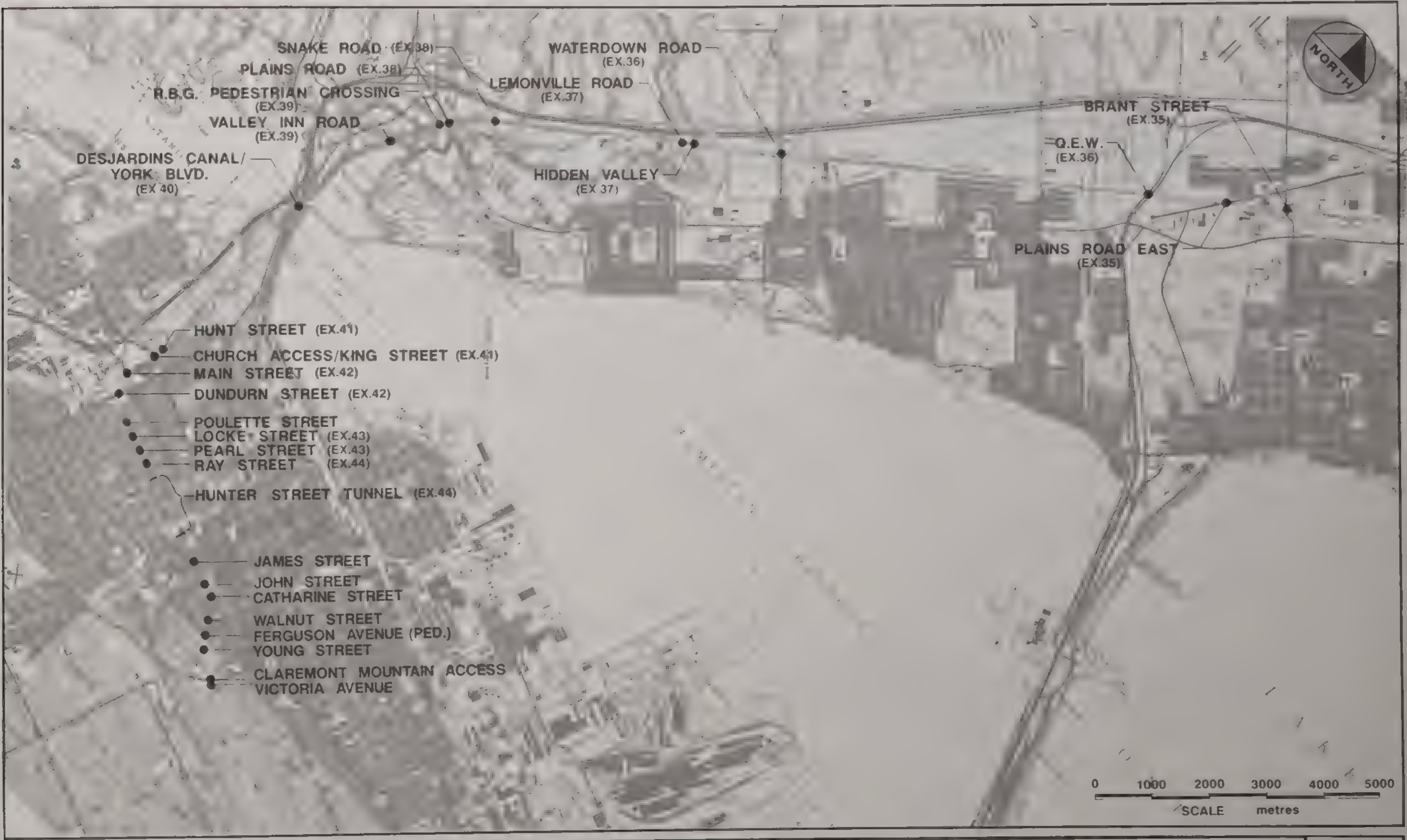
The new south track may use the existing rail span without affecting the structure (see Exhibit 36).

g) Snake Road

The new south track may use the existing span without affecting the structure (see Exhibit 37).

h) Plains Road

The new south track may use the existing rail span without affecting the structure (see Exhibit 37).



GO TRAIN SERVICE EXPANSION PROGRAM

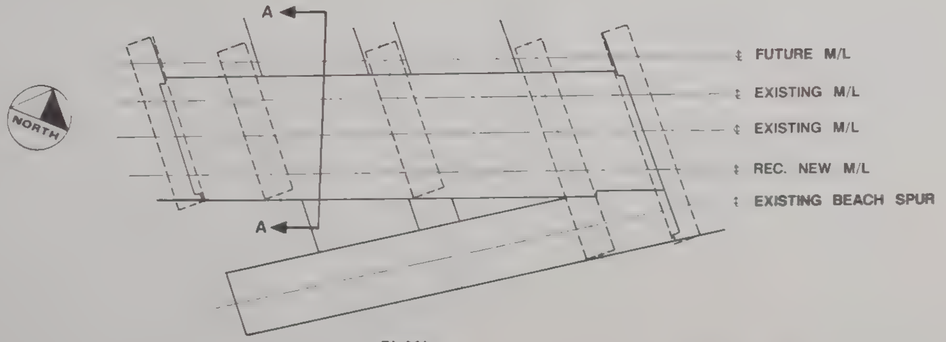
BURLINGTON TO HAMILTON STUDY

KEY PLAN FOR STRUCTURE LOCATIONS ON RECOMMENDED ROUTE

(SEE EXHIBITS 35 - 44 FOR DETAILS)

EXHIBIT

34



PLAN

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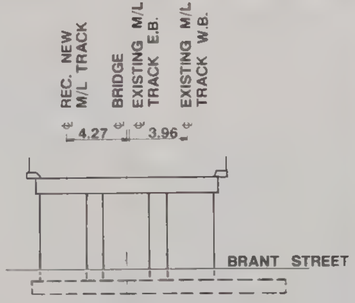

SECTION A-A

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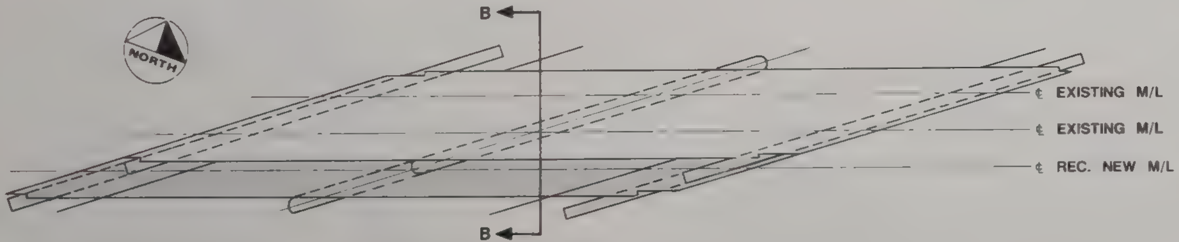
BRANT STREET



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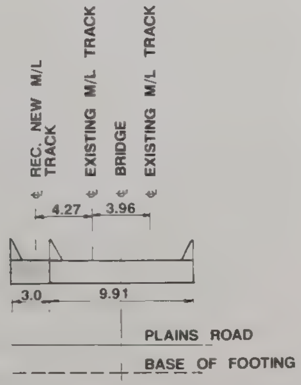

SECTION B-B

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SCALE 1:300

PLAINS ROAD EAST

EXHIBIT

35

STRUCTURES ON RECOMMENDED ROUTE

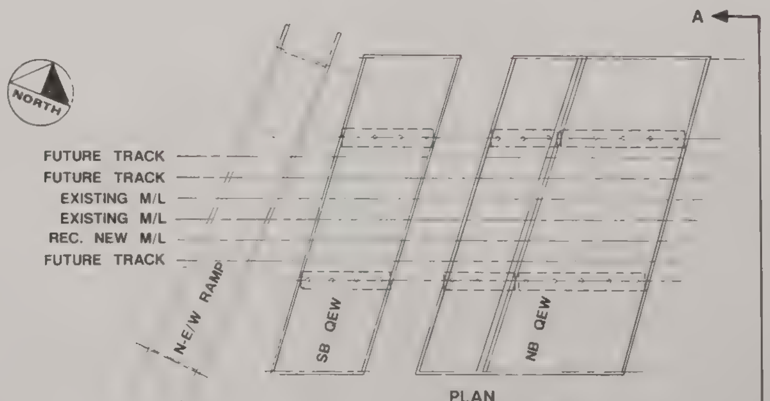
BRANT STREET, PLAINS ROAD EAST

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

GO TRANSIT

Q.E.W.



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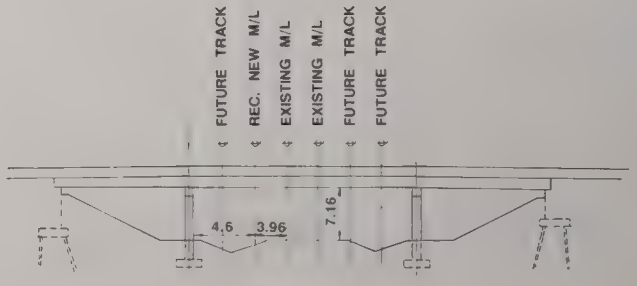

ELEVATION A-A

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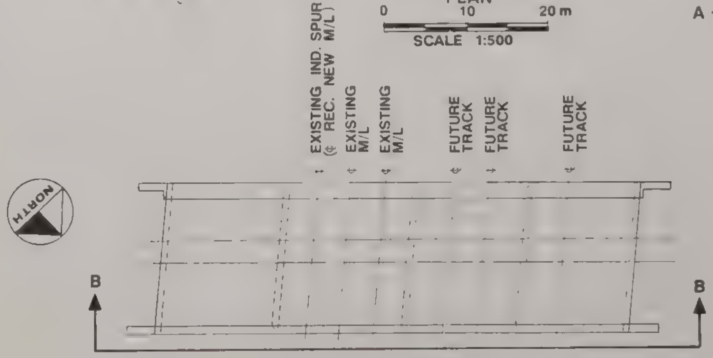
SCALE 1:500

WATERDOWN ROAD



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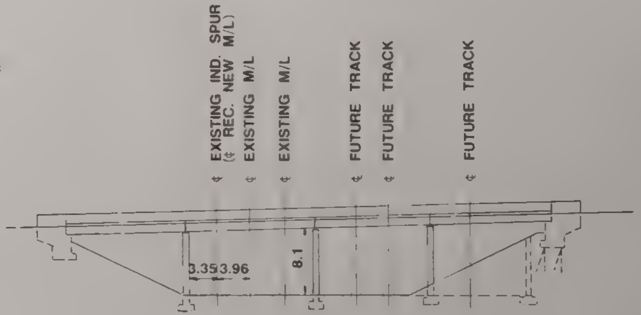

ELEVATION B-B

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SCALE 1:500

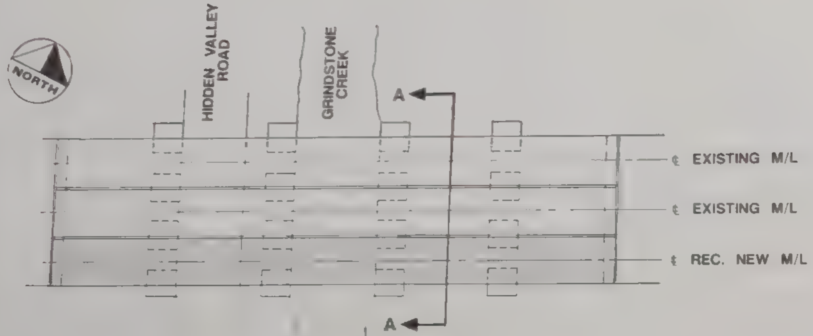
GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

STRUCTURES ON RECOMMENDED ROUTE
Q.E.W., WATERDOWN ROAD

EXHIBIT

36



PLAN

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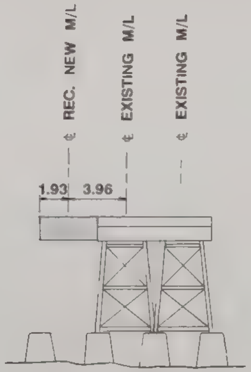

SECTION A-A

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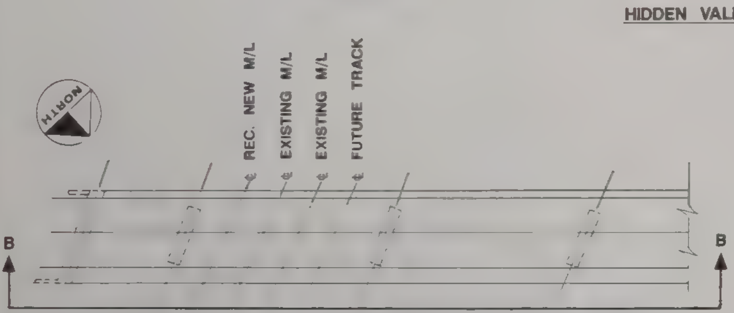
HIDDEN VALLEY



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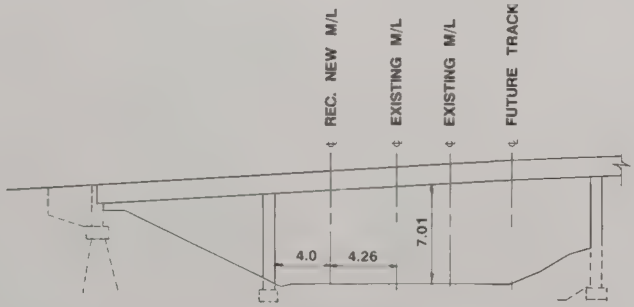

SECTION B-B

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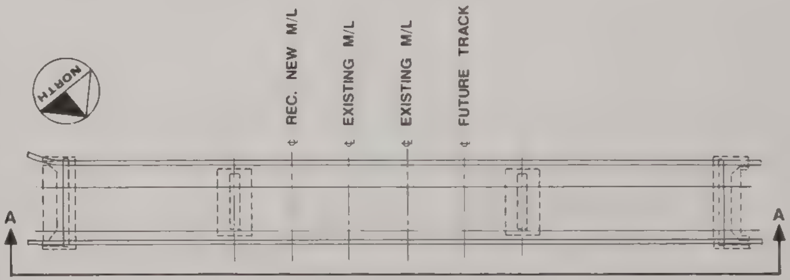
SCALE 1:300

LEMONVILLE ROAD

EXHIBIT
37

STRUCTURES ON RECOMMENDED ROUTE
HIDDEN VALLEY, LEMONVILLE ROAD

GO TRAIN SERVICE EXPANSION PROGRAM
BURLINGTON TO HAMILTON STUDY



PLAN

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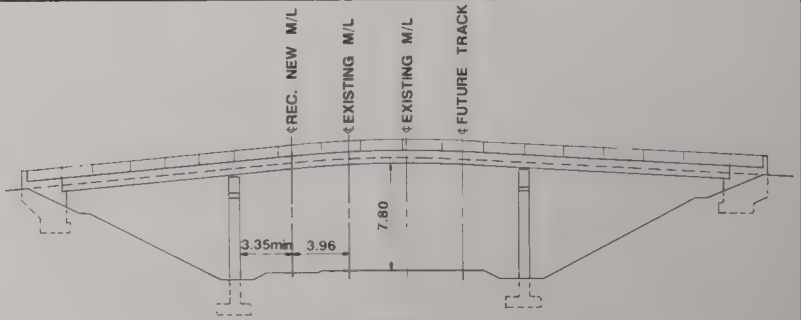

ELEVATION A-A

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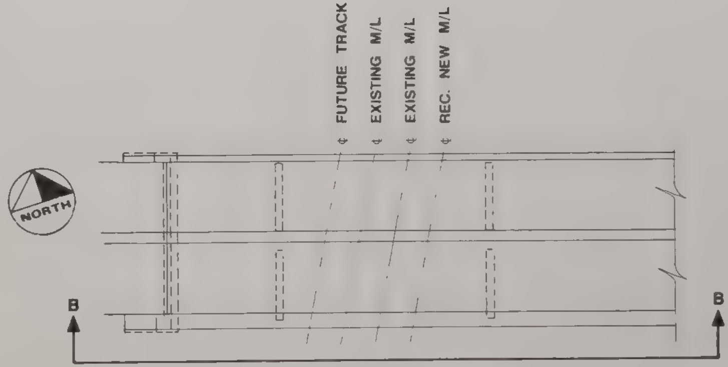
SCALE 1:300

SNAKE ROAD



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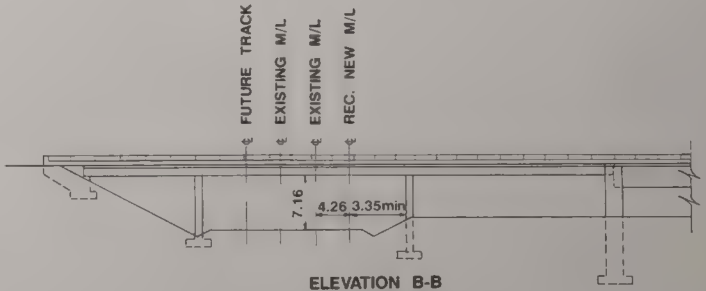


ELEVATION B-B

0 10 20 m
SCALE 1:500

PLAINS ROAD

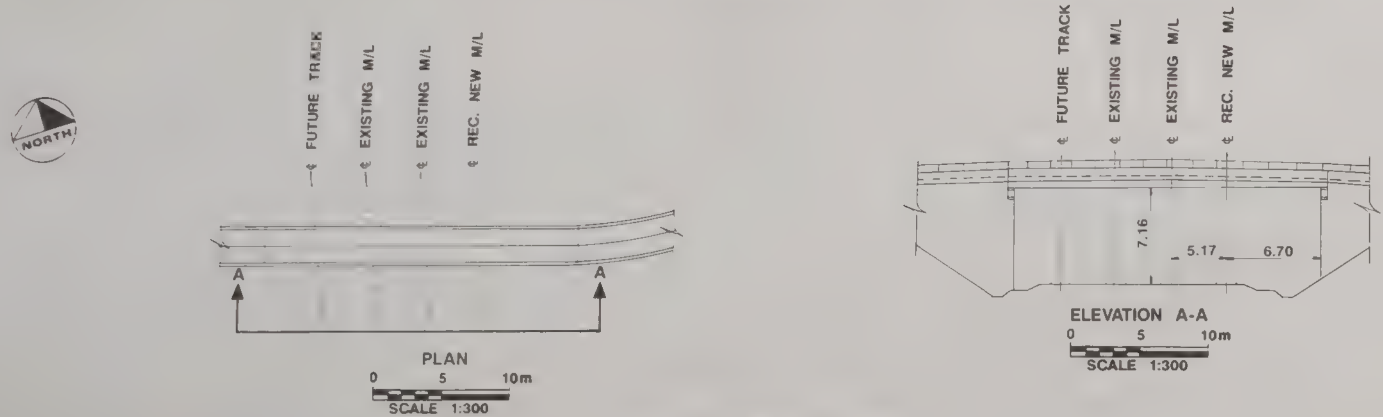
GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

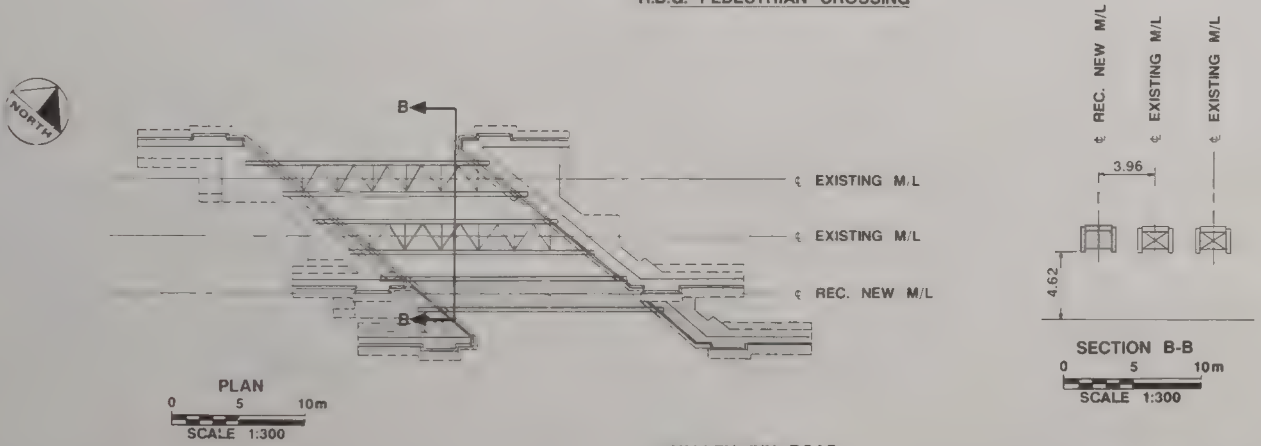
Ministry of Transportation
GO TRANSIT

STRUCTURES ON RECOMMENDED ROUTE
SNAKE ROAD, PLAINS ROAD

EXHIBIT
38



R.B.G. PEDESTRIAN CROSSING



VALLEY INN ROAD

EXHIBIT

39

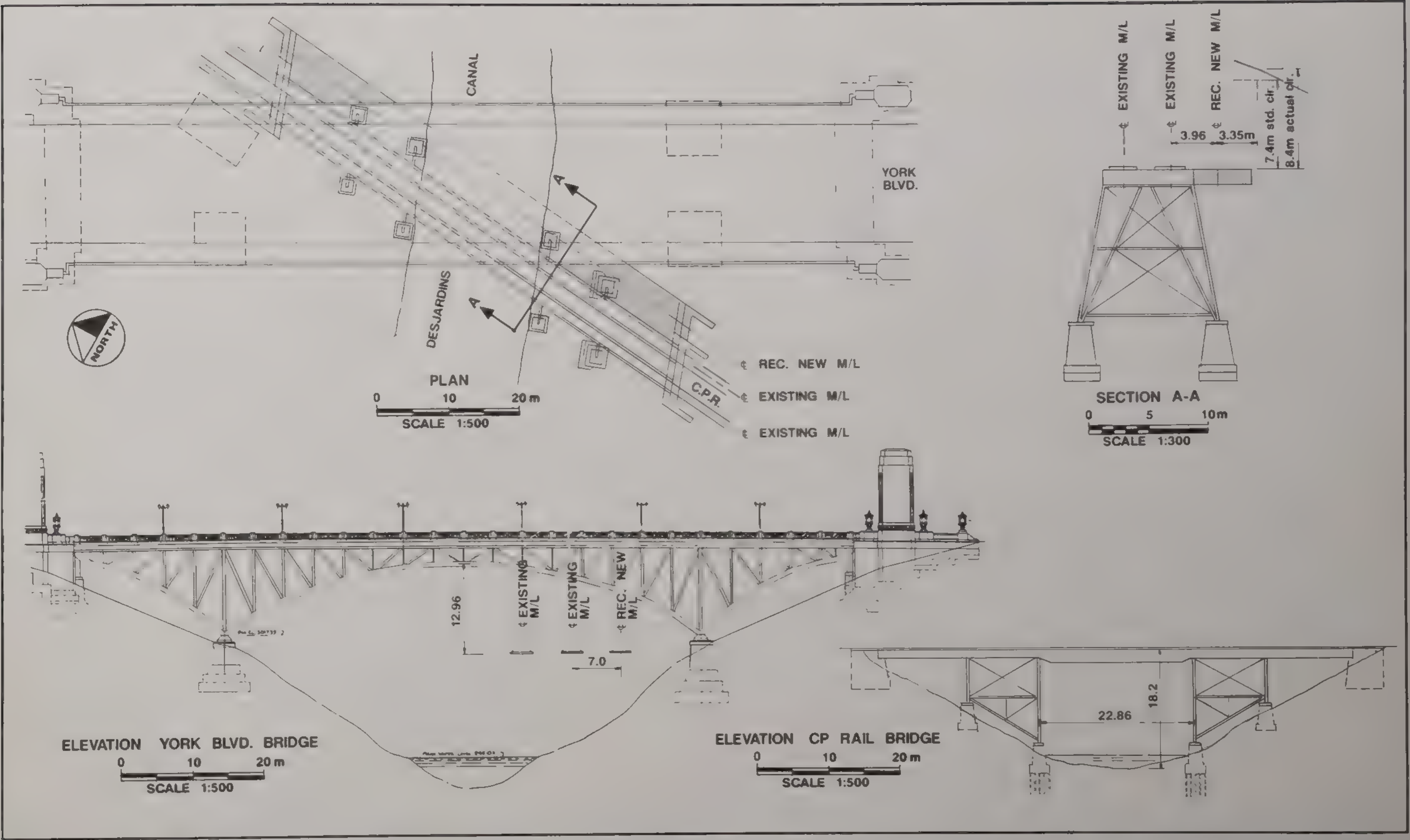
STRUCTURES ON RECOMMENDED ROUTE

R.B.G. PEDESTRIAN CROSSING, VALLEY INN ROAD

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

GO TRANSIT



GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

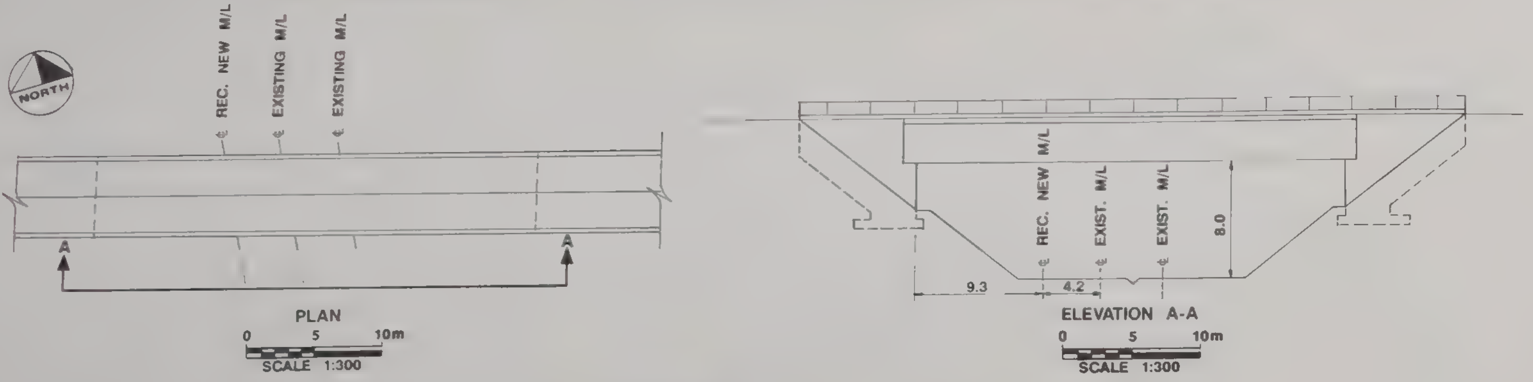
Ministry of Transportation GO TRANSIT

STRUCTURES ON RECOMMENDED ROUTE

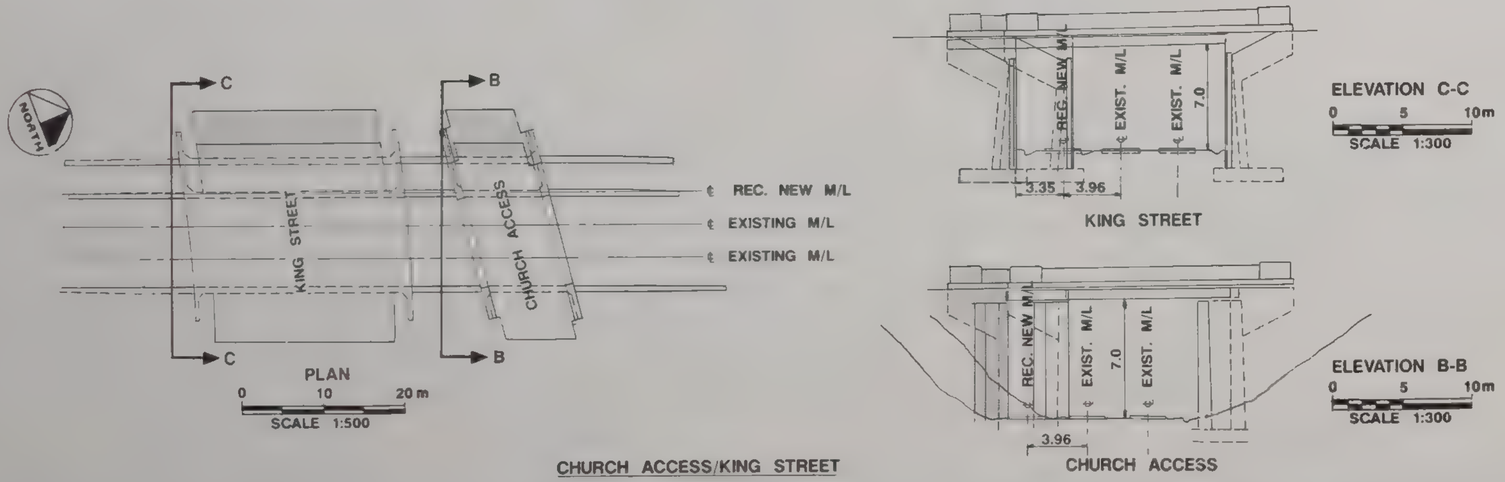
DESJARDINS CANAL, YORK BLVD.

EXHIBIT

40



HUNT STREET



CHURCH ACCESS/KING STREET

EXHIBIT

41

STRUCTURES ON RECOMMENDED ROUTE

HUNT STREET, CHURCH ACCESS/KING STREET

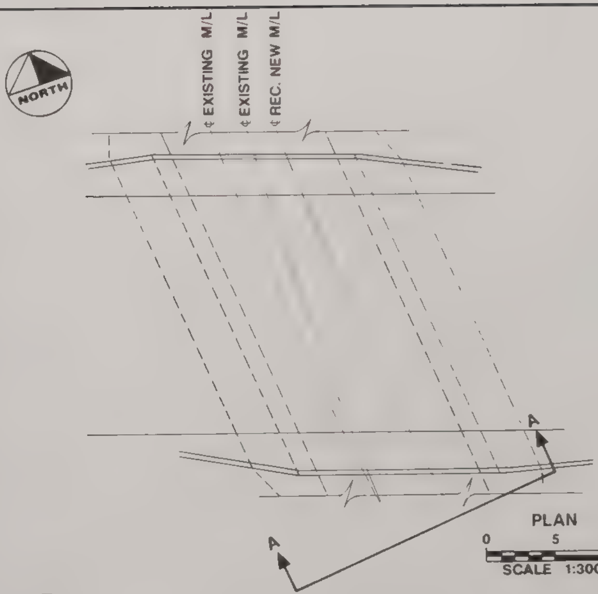
GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

Ministry of Transportation

GO TRANSIT

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH



PLAN

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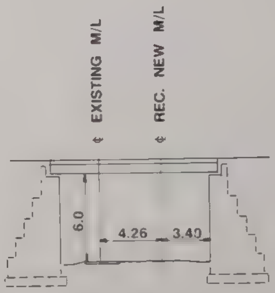
SCALE 1:300



ELEVATION A-A

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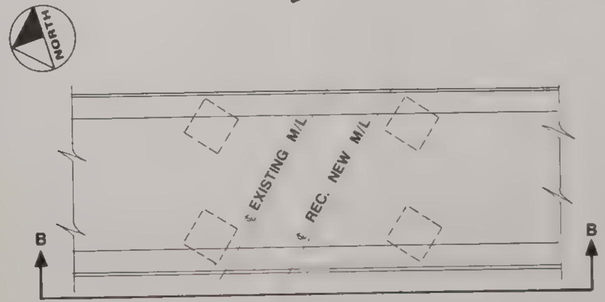
SCALE 1:300

MAIN STREET



PLAN

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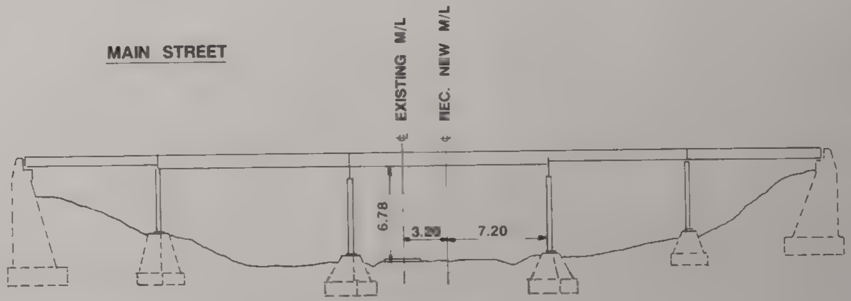
SCALE 1:300



ELEVATION B-B

0 5 10m

SCALE 1:300

DUNDURN STREET

GO TRAIN SERVICE EXPANSION PROGRAM

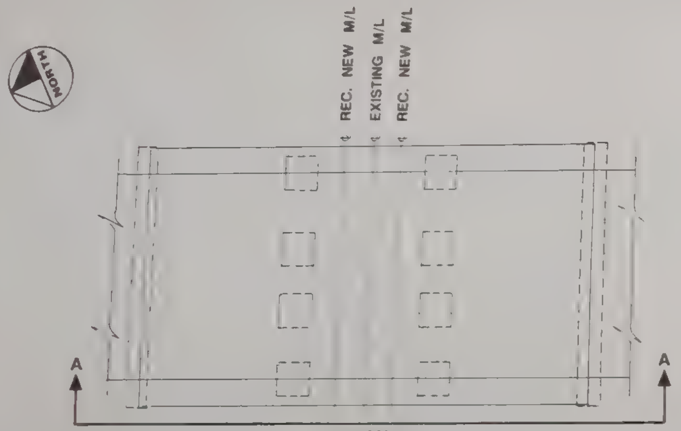
BURLINGTON TO HAMILTON STUDY

STRUCTURES ON RECOMMENDED ROUTE

MAIN STREET, DUNDURN STREET

EXHIBIT

42



PLAN

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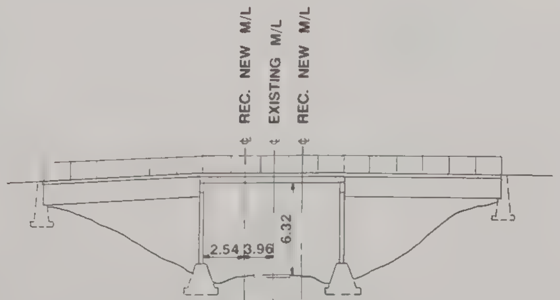
SCALE 1:300

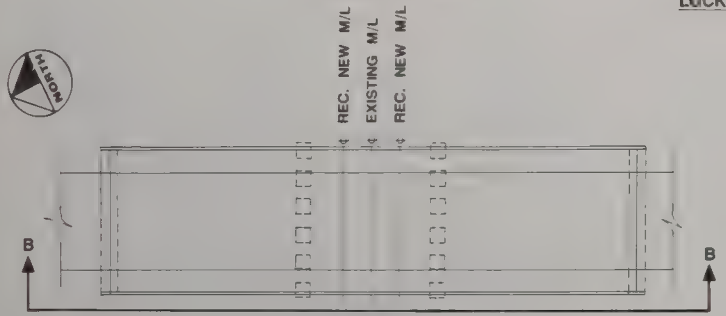


ELEVATION A-A

0 5 10m

SCALE 1:300

LOCKE STREET



PLAN

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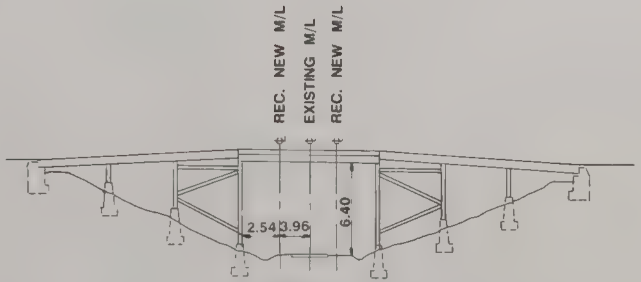


ELEVATION B-B

0 5 10m

SCALE 1:300

PEARL STREET

EXHIBIT

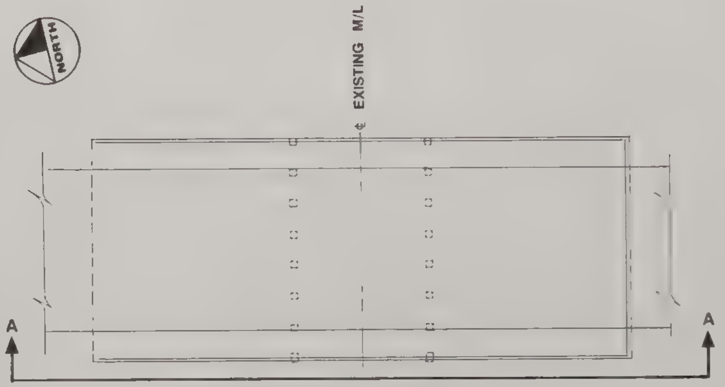
43

STRUCTURES ON RECOMMENDED ROUTE

LOCKE STREET, PEARL STREET

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY



PLAN

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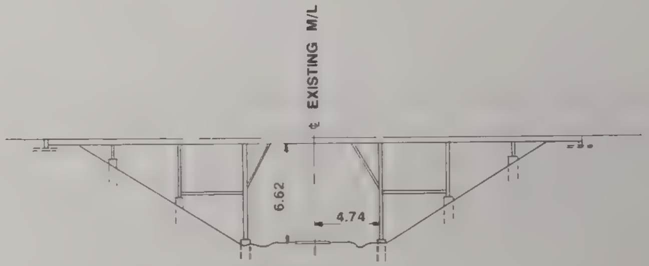
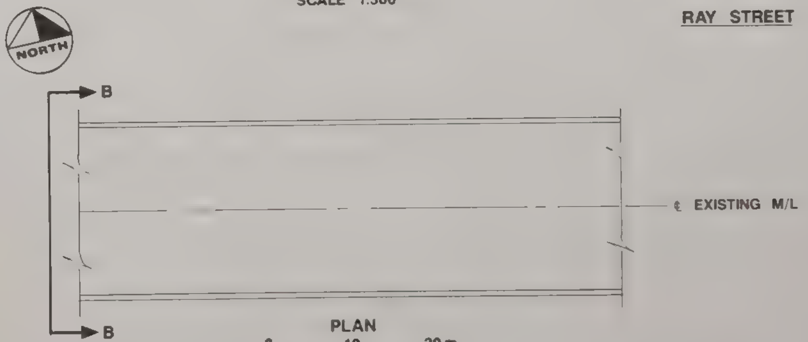
SCALE 1:300



ELEVATION A-A

0 5 10m
SCALE 1:300

RAY STREET



PLAN

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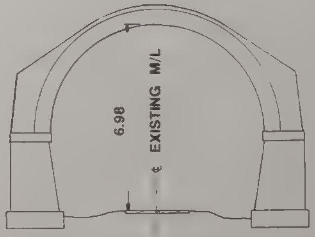
SCALE 1:500



ELEVATION B-B

0 5 10m
SCALE 1:300

HUNTER STREET TUNNEL

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

Ministry of Transportation
GO TRANSIT
The Regional Municipality of Hamilton-Wentworth
The Regional Municipality of Halton

STRUCTURES ON RECOMMENDED ROUTE
RAY STREET, HUNTER STREET TUNNEL

EXHIBIT

44

i) R.B.G. Spring Gardens Pedestrian Structure

The new south track may use the existing span without affecting the structure (see Exhibit 38).

j) Valley Inn Road

A new deck is required for one track on the east side. Only the provision for a single track would be the responsibility of GO Transit, but the apportunity exists for CN Rail to minimize future reconstruction costs by expanding the wingwalls and abutments to their ultimate form at this time (see Exhibit 38).

k) Desjardins Canal

An additional deck is required on the east side of the existing two-track structure. Consideration may be given to matching the existing structure through use of concrete pier footings, steel truss supports, and wooden tie deck, or using a longer span to minimize the amount of in-water work necessary. There is adequate clearance under the arch of the York Boulevard High Level Bridge for the addition of a track to the east side of the existing tracks. Reconstruction of wing walls on either side of the Canal crossing will be necessary (see Exhibit 39).

l) Hunt Street

The new track on the west side of the existing tracks may use the existing span without affecting the structure (see Exhibit 40).

m) King Street/Church Access

This interconnected pair of structures is incapable of accommodating an additional track, and would require reconstruction for a new west side track. The removal and reconstruction of both structures and associated retaining walls is described in Section 6.3.10 (f) (see Exhibit 40).

n) Main Street

Realignment of the tracks at Main Street is recommended, as shown on Exhibit 25A, to eliminate the need to reconstruct the structure (see Exhibit 41).

o) Dundurn Street

The two realigned CP tracks may pass under the Dundurn Street structure without affecting it (see Exhibit 41).

p) Poulette Street

The Poulette Street structure was removed by CP Rail in 1986 after it became unsafe to use. Its reinstatement is subject to agreement between CP and the City of Hamilton, and is assumed not to be the responsibility of GO Transit.

q) Locke Street

Two tracks (one existing, one new) centred on the right of way may pass under the Locke Street structure without affecting it (see Exhibit 42).

r) Pearl Street

Two tracks (one existing, one new) centred on the right of way may pass under the Pearl Street structure without affecting it (see Exhibit 42).

s) Ray Street

Continued use of the existing structure, by the existing single track, is recommended (see Exhibit 43).

t) Hunter Street Tunnel

GO Trains may utilize the single track through the existing Hunter Street Tunnel with no effect on the structure (see Exhibit 43).

u) James Street

No changes will occur to the structure itself, although the earth fill behind the south half of the east abutment will be removed to make space for the Bus Terminal and the abutment supported if necessary (see Exhibit 44).

v) John Street

No changes will occur to the structure itself, although the structure behind the south half of the west abutment will be removed to make space for the Bus Terminal and the abutment supported if necessary (see Exhibit 44).

w) Catharine Street, Walnut Street, Ferguson Avenue (pedestrian), Young Street, Claremont Mountain Access, Victoria Avenue

These structures, located between the CP/TH&B Station and the recommended Victoria Avenue GO Train storage yard, will not be affected physically by the track realignment that will occur in the corridor (see Exhibits 27 and 28). Some regrading of the track bed atop the Ferguson Avenue and Young Street structures will be necessary to allow the construction of a third track in the CP corridor to link the Yard and the Station.

6.3.4 Grading

The physical impact of the full recommendations on the rail corridor are discussed in this section, even though it is recognized that certain incremental steps in the implementation of the recommendations may have little or no impact. Essentially, the widening of the existing track bed by 4 m to provide for an additional track between the Burlington GO Station and the west portal of the Hunter Street Tunnel in Hamilton is required. Exhibits 15 to 28 may be referred to for grading plans.

East of Waterdown Road, the corridor is generally broad and level, and the widening of the existing track bed by 4 m to the south will involve only a minor amount of grading and fill, along with ditch realignment and relocation.

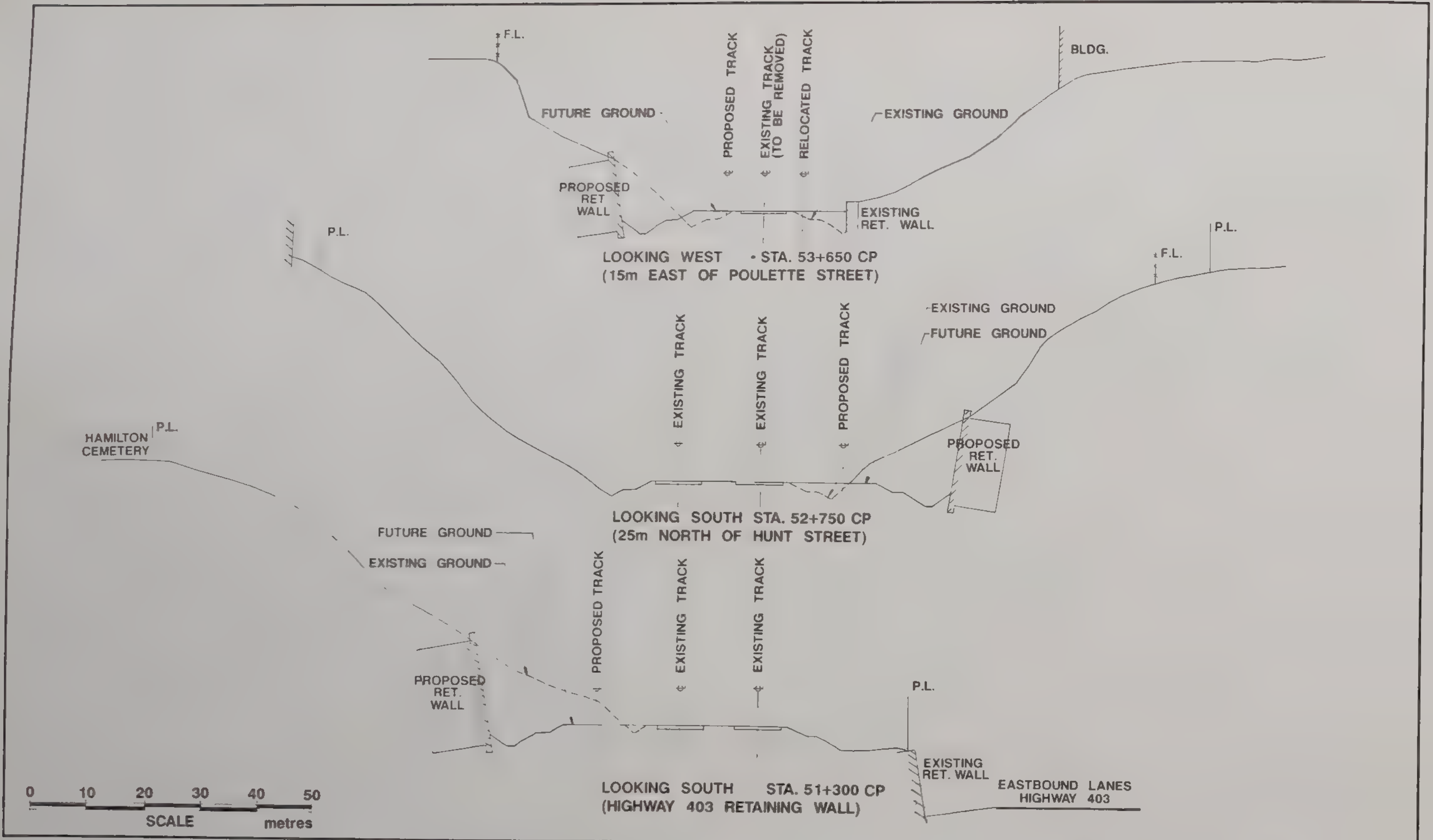


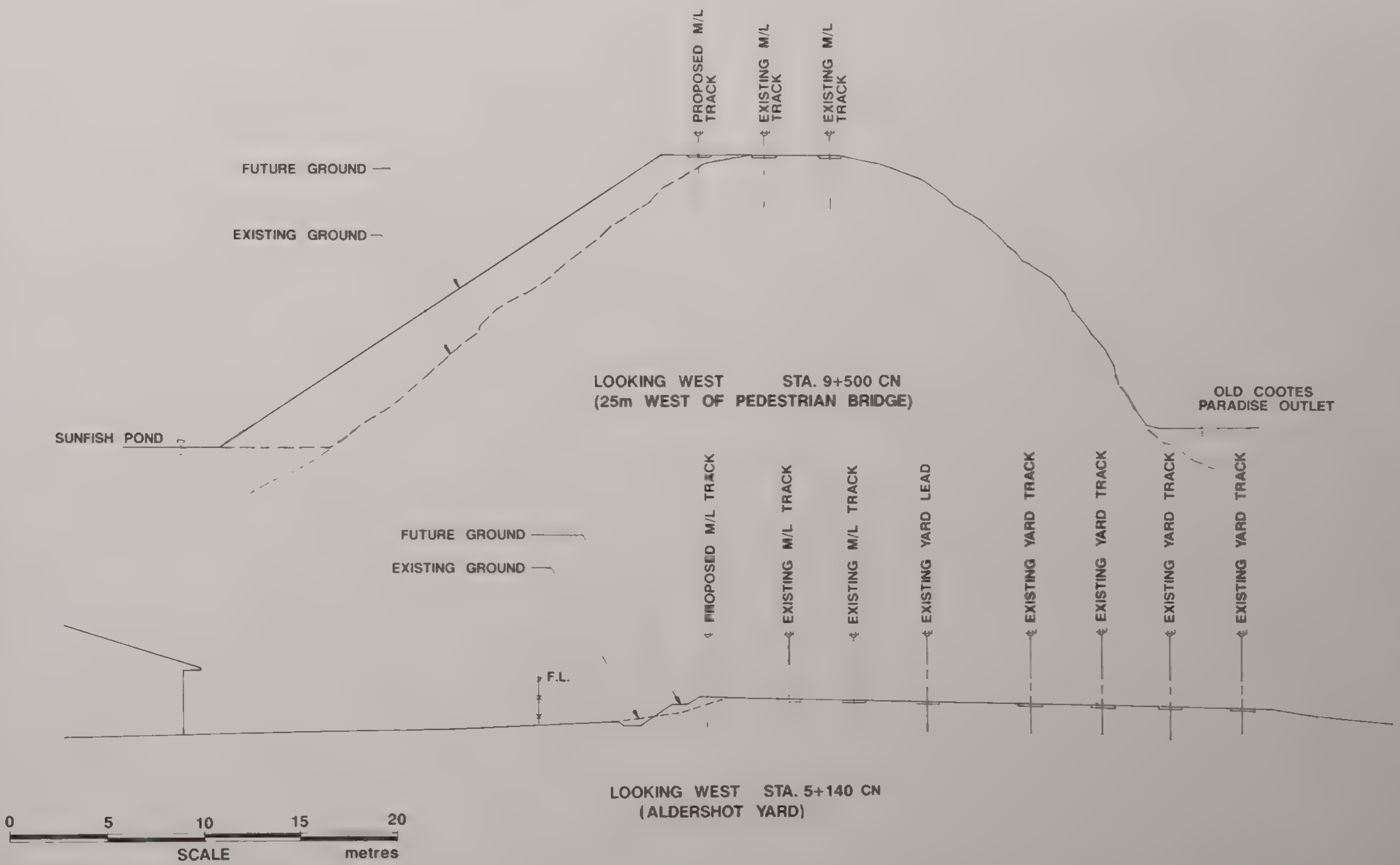
EXHIBIT
45

TYPICAL CROSS-SECTIONS

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

GO TRANSIT



GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

TYPICAL CROSS-SECTIONS

EXHIBIT

46

Between Waterdown Road and Spring Garden Road, however, the track corridor generally alternates between cut sections and brief deep ravine crossings on fill. Due to the shaly nature of much of the cut material on the south side, particular attention will be paid in detailed design to slope stability and erosion prevention. Numerous options are available (benching, revegetation, slope covering, slope anchors, slope drainage) to address the specific conditions encountered. Gabion walls or toe walls may be considered during detailed design in some sections, and in particular at the Beth Jacob Synagogue cemetery.

The existing railbed crosses several deep ravines containing minor tributaries of Grindstone Creek, and the widening of the original fill slopes to the south will entail stripping and benching of the existing slopes followed by layering of compacted new fill to a 4m width. The slopes of the existing embankments (general 1.5:1) will be retained in order to minimize the extent of impact on vegetation as well as the amount of new fill required. Slopes will be well-drained to ensure stability, and revegetated to minimize erosion potential.

Much of the same description applies to the area between Spring Garden Road and Valley Inn Road, although part of the toe of the new slope will extend into Sunfish Pond. The treatment of the slope in detailed design and construction will be oriented to ensuring the stability of the slope, minimizing the extent of impact on the pond, and addressing means of minimizing the effect on the underwater littoral zone.

West of Valley Inn Road towards Hamilton Junction and Desjardins Canal a similarly steep embankment above Hamilton Harbour exists, although the embankment in the area is either wide enough or has flat enough side slopes that adding a new south track will not entail the extension of fill beyond the existing shoreline. Particular attention will be given to minimizing the impact of the additional fill on the environmentally sensitive marsh area just north of Desjardins Canal.

On the CP line, a low retaining wall or toe wall will be required as the new track skirts the base of Hamilton Cemetery south of the Canal, possibly combined with a regraded or covered slope. The appropriate means of ensuring the long-term stability of the Cemetery slopes will be determined in detailed design.

Minor cuts or fills are necessary for the additional track on the west side of the corridor between the Canal and Main Street. Any grading in the vicinity of Kay Drage Park will account for the presence of sanitary landfill adjacent to the rail right of way, and a toe wall will be required as the railway passes in cut adjacent to Christ the King Cathedral.

Since the trackbed from Main Street to Queen Street once accommodated two tracks, the reinstatement of the second track and the centering of the lines within the right of way will minimize the amount of new grading required in the area. Between Poulette Street and the entrance to the Hunter Street Tunnel, current cross section standards and drainage requirements may require the extension, replacement, or construction of short toe walls on either side of the two tracks. The exact cross section in the area will be determined during detailed design, but is not anticipated to be significantly different from that which exists today.

The final area where grading will be required is in the vicinity of the Victoria Avenue GO Train storage yard, where the railway property now occupied by various CP and CN tracks will be leveled and regraded to provide a base for the five storage tracks and two through freight lines. The grading activities will be contained within the existing railway property envelope.

6.3.5 Layover/Train Storage

The rationale behind the recommendations to redevelop the CP Rail Victoria Avenue Yard as a site for overnight GO Train storage is discussed in Section 5.6.4.

The recommended yard layout as shown in Exhibit 28 assumes the abandonment of at least the Ferguson Avenue portion of the CN Rail Hagersville Subdivision (now in process by CN). The two CP Rail through freight lines can be shifted to the south just enough to allow five parallel GO tracks to be constructed between the tracks and the property line to the north. There is space for five GO tracks, each at least 300 metres long (sufficient for a ten-car train plus locomotive) with rail access from both ends between Victoria and Wentworth Avenues.

The GO tracks will be 4.3 metres between centres, with 6.1 metres between every second one to allow maintenance equipment to travel the length of each train. A crew building and electrical transformer station will be provided at the east end of the yard, with a small parking area and access from the foot of Grant Avenue. Wayside power is to be provided for the yard.

To link the yard with the CP/TH&B Station, the reinstatement of a track on the north side of the CP main lines is recommended, extending from Victoria Avenue to Ferguson Avenue in the right of way currently occupied by the CN Ferguson Avenue line. This will allow GO Trains free passage between the Yard and the Station without interfering with CP Rail through freight traffic.

The various spurs on the south side of the right of way will be rejoined to the shifted CP main lines if their continued operation is desired by CP Rail, and if the Mountain section of CN Rail's Hagersville Subdivision is in operation at the time of Yard reconstruction, it will be realigned and regraded to the south to join the CP tracks in the vicinity of Victoria Avenue. The transfer tracks between the CN and CP lines are to be relocated elsewhere by CN and CP Rail upon abandonment of the Ferguson Avenue line.

All of the work associated with the reconfiguring of the Victoria Avenue Yard, with the exception of the abandonment of the Ferguson Avenue line and relocation of the CN/CP interchange tracks would be the responsibility of GO Transit, although the actual construction activities would likely be done by CP Rail and CN Rail for GO.

6.3.6 Property

Exhibits 15 to 28 illustrate the property ownership in the corridor and the extent of the impact of the trackwork and grading required to fully implement the study recommendations. It should be noted that most of the facilities, such as new track and signals, to be constructed within the CN and CP rights of way will be the property of CN and CP. GO Transit, as a transit operator, will only be involved in the ownership of facilities such as Stations or storage yards, as well as rolling stock.

The existing rail corridors are wide enough to accommodate the impact of single track widening virtually throughout the study area. The only area where a significant property impact is noted is at the proposed Waterdown Road Station, where protection for the ultimate CN Rail yard expansion and corridor requirements will require the setting aside of 1.64 ha of provincially-owned property (0.91 ha owned by the Ministry of Transportation and 0.73 ha by the Ministry of Government Services) for use by CN Rail. Discussions between CN, M.T.O., M.G.S., and GO Transit will take place at the detailed design stage regarding the transfer of property and the availability of adjacent CN property for potential long-term expansion of the Waterdown Road Station parking area. It has been indicated by CN that such property could be made available to GO, if necessary.

Between Hidden Valley and Desjardins Canal, preliminary grading plans indicate that no fill will extend beyond the CN Rail property line. However, the need for a nominal amount of fill to extend onto Royal Botanical Gardens property and the possible requirement for temporary construction easements may be determined during detailed design. The R.B.G. representative on the study Technical Advisory Committee has indicated that minor regrading associated with embankment widening would not likely be considered a serious problem, and such issues, if raised during the design process, will be subject to discussion between GO Transit, CN Rail and the R.B.G.

An adjustment in the Valley Inn Road alignment at the CN crossing may involve a minor transfer of property between CN Rail, the City of Burlington and the R.B.G. in order to accommodate the shifted City-owned road allowance.

No further property requirements arise until the CP/TH&B Station in Hamilton. CP Rail owns the track right of way, station structure, and all the property between Hunter Street and Beckley Street, as well as large blocks of property south of the existing tracks both east and west of the station (see Exhibit 27A). It has been indicated by CP that all of the property other than the rail right of way is surplus to CP's needs, as the station has not functioned as such since 1981 and virtually all of the former TH&B offices have been removed from the building. As well, the City-owned Beckley Street right of way is required to be consolidated into the property to allow the Bus Terminal relocation there. Although GO Transit will be the main user of the site, the office tower and parking deck aspects of the development do not fall within GO's mandate. Accordingly, discussions are anticipated following approval of the Environmental Assessment Report, concerning the ownership and operation of the Station and associated functions between CP Rail, GO Transit, and other interested parties (including possibly the City of Hamilton Parking Authority and private development interests). No specific commitment is possible prior to the approval of the project regarding property issues at the Station site.

East of the Station, the provision of GO Train storage facilities in the Victoria Avenue Yard property will involve an arrangement between CN Rail, CP Rail and GO Transit regarding ownership of property and facilities. The abandonment of the CN Rail Hagersville subdivision in the area is assumed to result in the property being made available for GO/CP track realignment. All trackwork will be confined within the existing CN and CP Rail property limits.

6.3.7 Hunter Street Tunnel

The CP Rail line west of the CP/TH&B Station in Hamilton passes directly under Hunter Street in a brick arch tunnel, approximately 595 metres long, constructed in 1895 using cut and fill techniques. It was designed as a two track tunnel, and functioned that way until 1953 when a Centralized Traffic Control system was installed on the TH&B, allowing one track to be removed and the remaining one to be centred in the tunnel, allowing new higher and wider freight cars (such as auto carriers) to pass.

Given current rail car sizes and clearance standards, it is impossible to operate the Tunnel as a two-track system without reconstructing it to be higher and wider. Since the single existing track is capable, with improved scheduling and some delay to CP operations, of providing a significant increase in GO Train service, the reconstruction of the Tunnel is not recommended as part of the current project. If and when the Tunnel is reconstructed, it would be subject of a separate study and separate Environmental Assessment process. However, fundamental to the rationale behind the recommendations to shift GO Train service from the CN to the CP corridor in Hamilton is the knowledge that, should demand warrant at some point in the future, it is possible to reconstruct the Hunter Street Tunnel to provide two tracks and thus full GO Train service to the CP/TH&B Station. The technical aspects of such a project are outlined in this Section.

Morrison Hershfield Limited, Consulting Engineers, were retained to study the Hunter Street Tunnel issue, and their full report is included as Appendix F. Given the constraints of maintaining rail traffic and access to Hunter Street properties throughout the construction period, and keeping all construction activity within the 20 metre street right of way, the reconstruction of the Tunnel is a difficult task requiring innovative techniques.

The solution proposed is to build a new structure around the existing tunnel. This would be accomplished by installing interlocking structural caissons to form the walls of the new structure. This would be followed by excavation along Hunter Street, down to the existing tunnel. The upper portion of the tunnel arch would be removed from above, using a moveable steel liner inside the tunnel to safeguard railway operations. A poured-in-place concrete deck would be constructed with integral connections to the caisson walls and Hunter Street would be rebuilt on top of the new structure.

Construction would seriously disrupt traffic on Hunter Street, and several measures have been incorporated to cushion the effects of the work. Alternate routes would be provided for through traffic normally using Hunter Street.

Construction would generally be completed on a block by block basis so as to limit the extent of the work area at any given time. Temporary wood decking supported on steel girders would be used in the work area to maintain local and emergency access along Hunter Street. Work would continue throughout the winter to compress the overall construction schedule.

Final demolition of the lower portion of the old tunnel would be performed from track level inside the tunnel, as would construction of the new tracks and trackbed, with minimal effect on Hunter Street. Installation of a caisson liner, a cosmetic option, would also be performed inside the new structure.

The report concludes that it is feasible to construct a double track tunnel at an estimated cost of $38 million. The overall construction period would be just over two years.

The study is based on a permanent vertical clearance of 6.70 m (22'-0") from top of rail (22'-6" from base of rail) in the new tunnel, as indicated in a report by CP dated December, 1986. In a letter dated 24 September, 1987, CP revised their minimum vertical clearance to 7.92 m (26'-0") from top of rail (26'-6" from base of rail) to allow for possible future electrification. Because of the shallow (or lack of) cover over the tunnel deck slab, the additional clearance would have to be made up by a corresponding lowering of the track and foundation of the new tunnel, resulting in a maximum track gradient of 1.25% east of the tunnel and a cost increase of approximately $4 million over the $38 million previously noted. It should be noted that the 7.92 m clearance is not available in the existing tunnel, and, of the seven CP structures between Desjardins Canal and the Tunnel, only the Hunt Street crossing provides such a clearance.

The alternatives of $38 or $42 million have been rounded off to $40 million for the purposes of the preliminary analysis of alternatives in Section 5.5.3.

6.3.8 Cost

The infrastructure required to implement all of the Study recommendations has a current estimated cost of approximately $75 million. The cost breakdown is summarized in Exhibit 47 and detailed in Table 21. All costs are very preliminary, as unit costs are unavailable from the railways, and both CN Rail and CP Rail, which would actually carry out any track work, reserve the right to prepare detailed cost estimates for that work during the detailed design stage.

The cost associated with an initial switch of GO Train service from the CN route to the CP/TH&B route, including Station rehabilitation and provision of Bus Terminal facilities, is in the order of $17 million.

6.3.9 Staging Opportunities

Numerous opportunities exist to implement the recommendations in a staged manner. These stages would reflect demand, operational characteristics, and availability of funds. The distinct elements that could comprise separate stages are: shift GO Trains

EXHIBIT 47 : MAJOR COST ELEMENTS FOR RECOMMENDED ROUTE

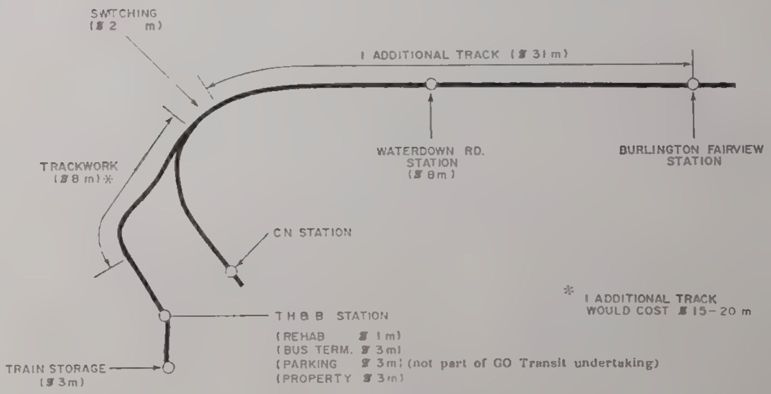


TABLE 21 COST ESTIMATES - RECOMMENDED ROUTE

SECTION	ITEM	INCLUDING	COMMENT	COST
CN Burlington STA. 1+150 to 10+440 (One Additional Track)	Grading & Drainage	Earth excavation/fill, granular surface drainage, clearing, landscaping, 20% engineering and contingencies.	Use cost from experience on [illegible] the Oshawa GO [illegible] expansion in CN co[illegible] CN cost for [illegible] new tracks was $1.35 m/km 8.94 km x 1.35 m = $6.0 m (plus 20%) / 2 tracks	[illegible]
	Structures	Additional deck at crossings, where necessary, culvert extension, retaining walls, roadworks at structures, 20% engineering and contingencies.	Use current typical estimates of $1600 m² for bridge deck and $500/m² for retaining walls. [illegible] $1[illegible] [illegible]: $0.5 m [illegible] $[illegible] m [illegible] $0.[illegible] m	[illegible]
	[illegible]	Continuous welded rail, ties, ballast, turnouts, crossovers, switch heaters, 20% engineering and contingencies.	Current unit costs used as provided by Morrison Hershfield and checked against CN and CP costs. Welded rails: $400 m Yard Tracks: $280 m No. 10 turnout: $ 65,000 No. 20 turnout: $125,000 Switch heater: $ 40,000	[illegible]
	Signals, Relocation of CNCP Telecommunications Cables	Signals for one new mainline track and resignalling at each turnout, relocation of CNCP Telecommunications cables and 20% engineering and contingencies	CN Report has $25 m assigned for two new mainline track signals for the 12 km from Burlington to Hamilton station. Preliminary design indicates 25 turnouts required for one new track and 46 for two. Cost is therefore: $25 m x 8.94 km / 2 km x 25/46 turnouts = $10.1 m (plus 20%)	$12 [illegible] m
	SUBTOTAL		Does not include property costs.	[illegible] m say $[illegible] m
Waterdown Road GO Station	Station	Station building, two rail platforms, shelters, pedestrian tunnel, parking for 500 cars. 20% engineering and contingencies	GO Transit experience with new on line stations including parking and trackside work is approximately $5 m per station (plus 20%)	$6.0 m
	[illegible]	Modified Highway 403 off ramp and intersection with Waterdown Road, access from Waterdown Road, traffic signals, 20% engineering and contingencies		$2 [illegible] m
	SUBTOTAL			$8 m
Hamilton Junction	Switching from CN to CP [illegible]	Track, grading and signal work for connection of one new CN track to existing CP track at Hamilton Junction	Cost provided by CN in letter of Dec. 8, 1987. From one new south track on CN to existing CP: $1.9 m	$2 m
CP Hamilton Limited Service Ham[illegible] To East End of CP TH&B [illegible] STA. [illegible]	Track & Signals	Grading and culvert extensions for track relocation at (originally proposed) Kay Drage Park Station site, grading for realigned track at Main Street, reballast existing main tracks, renew and respace ties, replace tracks with 136 #CWR, realign track at Main Street, new turnouts and replacement of old turnouts, switch heaters, replacement of ABS with CTC signal system (including office and field equipment, 20% engineering and contingencies	From CP report "Study to Identify the Rail Plant Improvements in Order to Provide GO Rail Commuter Service Extensions to Oshawa and Hamilton Utilizing Segments of CP Rail Right-of-Way" (December 1986) Grading $ 80,000 Culverts $ 15,000 Track: $2,535,000 Turnouts: $ 820,000 Fencing: $ 40,000 Switch Heaters $ 440,000 Signals: $2,320,000 Subtotal $6,250,000 Engineering (10%) $ 625,000 Contingencies (10%) $ 625,000 Total $7,500,000 Inflate 5% to 1987 dollars: $7.9 m Minor grading costs included for originally proposed Kay Drage Park Station are assumed to not affect overall total	$8 m
CP Hamilton (Intermediate Service)	Track & Signals	As for Limited Service, plus: Toronto [illegible] Additional turnouts, [illegible] heaters at Hamilton Junction and Main Street, additional main track, associated signals, retaining walls at Highway [illegible] and Hunt Street, relocate CNCP Telecommunications line, additional structure at Desjardins Canal, abutment protection at Hunt Street, reconstruction of Church Access, King Street, and Main Street structures and 20% engineering and contingencies	Limited Service (above) $7.9 m plus: CP Toronto Connection (Hamilton Junction to Main Street): Grading: $ 640,000 Culverts $ 45,000 Bridges: $5,660,000 Retaining Walls: $1,500,000 Track: $ 940,000 Turnouts: $ 810,000 Switch Heaters: $ 410,000 Signals: $ 630,000 Telecommunications: $ 30,000 Subtotal $10,465,000 Engineering (10%) $1,046,500 Contingencies (10%) $1,046,500 Total $12,558,000 Inflation (5%) $ 642,000 $13,200,000	$8 m (as above) plus $15-18 m
		CP TH&B Section Additional main track between Main Street and Queen Street, turnouts, switch heaters, reconstruction of Pearl and Ray Street structures, retaining wall between Poulette and Queen Streets and 20% engineering and contingencies	CP/TH&B (Main Street to CP/TH&B Station) Assume one new track only between Main Street and Queen Street. Replacing only Pearl Street and Ray Street structures, constructing one retaining wall, providing appropriate turnouts and switch heaters and relocating the CNCP Telecommunications line on the route, is estimated to cost $2 m to $5 m (depending on whether ultimate retaining wall requirements are built initially).	
CP/TH&B Station	Rehabilitation	Interior and exterior rehabilitation of Station building to upgrade passenger area and bring office space up to leasable standards	Assumed cost	$1 m
	Bus Terminal	Excavation of area between tracks and Beckley Street, retaining wall, bus platforms, shelters, services	Excavation/demolition $0.2 m Retaining Wall $1.3 m Bus Terminal Provision $1.5 m assumed	$3 m
	Property	Acquisition of property (station building, bus area) from CP Rail	Cost unknown and dependent on timing and conditions of discussions between GO Transit, CP Rail and other interested parties. Assume $3 m	$3 m
	SUBTOTAL			$7 m
	Parking Deck	Concrete parking deck, stairs, parking equipment	Cost for parking deck is not part of GO project cost. It is included in this table for reference only. Preliminary design and cost estimates prepared by Read Jones Christofferson Ltd. allow for a single 270 space deck at a cost of $2.4 m, or $9,000 per space. Add $0.6 m for finishing and equipment.	($3 m) (not included in project Total)
GO Train Storage	Victoria Avenue Yard Reconstruction	Track, switches, wayside power, lighting, maintenance facilities and all necessary provisions for storage of 5 GO Trains in the vicinity of the Victoria Avenue CP Yard. Includes relocation of CP main line tracks and reconnection of CN Hagersville Subdivision (mountain side only) but does not include replacement of CN/CP interchange tracks (cost assumed to be borne by CN and CP prior to GO project implementation). Add 20% for engineering and contingencies.	From CP report, track, turnouts and grading for 6 tracks is $1.2 m (plus 20%). Add $1.5 m for realignment of CP main lines and provision of power and GO Yard facilities.	$3 m
Total	Limited Service	All above, except additions for Intermediate Service on CP line and parking deck at CP/TH&B Station.	Totals do not include additional GO rolling stock required for increased service, construction project office, property acquisition (apart from CP/TH&B Station), or the cost of modifications required at the CN Aldershot Yard due to the presence of the Waterdown Road GO Station.	$59 m (say $60 m)
	Intermediate Service	All above, except parking deck at CP/TH&B Station		$74-77 m (say $75 m)

to CP/TH&B Station; shift Buses to CP/TH&B Station; increase level of GO Train service; and construct Waterdown Road Station. A further possibility is the expansion of service from Burlington to the Waterdown Road Station beyond that level provided into Central Hamilton.

a) Shift Route

An initial stage offering the greatest improvement in service for the least cost is the shifting of GO Train service to the CP/TH&B Station. The cost for improving track and signals on the CP line and rehabilitating the station for passenger use is under $10 million. The improvement in service by bringing GO Trains within reach of nearly all H.S.R. bus routes and a concentrated residential area is significant, but perhaps more important is the signal to Hamiltonians and others of a commitment to the CP/TH&B site which would translate into early economic benefits to the area.

b) Relocate Bus Terminal

From a user and operator point of view, the shift of GO Trains to the CP/TH&B Station should be concurrent with or even preceded by the transfer of the Hamilton Bus Terminal functions to the site. Again, this would allow economic development decision making to proceed at an early stage, and simplify the logistics of construction at the site (rather than building bus facilities while the station was already in use by GO Train passengers). Intercity bus operators have long awaited and strongly desired a move out of the cramped existing Bus Terminal, and the benefits to commuters of having all intercity and local transit services at an integrated terminal is perhaps the single greatest achievement of the undertaking. Between GO Buses and GO Trains, full service in the Hamilton-Toronto corridor would essentially be provided by the shift of GO Trains and GO Buses to the CP/TH&B Station.

c) Waterdown Road Station

The provision of the Waterdown Road Station is important to a number of groups, and its staging is made flexible by its location outside Hamilton. Halton and Burlington desire the Station at an early stage to add parking capacity to the GO Stations in the corridor and thereby relieve the overflowing Burlington Station; Hamilton commuters would appreciate the convenience and service of a new easily accessible Station; and many of those who currently park near the CN and Bus Stations in Hamilton would prefer its convenience and parking availability to that of the downtown CP/TH&B Station. Provision of the Station at an early stage would also help establish commuting patterns and improve service to commuters who travel by train one way and bus to return. The cost of the Station and its roadways would be in the order of $8 M, although some premium might be paid if the Station were constructed prior to the addition of tracks in the CN corridor, as significant trackwork is required in the vicinity of the platforms and work would be duplicated if the new platform tracks were reconnected to existing tracks rather than the new corridor tracks.

It is possible to construct the Station prior to any other part of the undertaking, in order to establish commuting patterns, improve service to Burlington, relieve Burlington Station, and provide alternative parking facilities for Hamilton CN and Bus Terminal users. However, no significant benefits would accrue to Hamilton unless the CP/TH&B Station were activated at the same time. The potential of the Station to relieve Burlington Station is anticipated to be a less significant factor in the future with the opening in September 1988 of the Appleby Line Station in East Burlington and the potential for expansion of parking facilities at Burlington Station.

d) Increase Train Service

Increases in the level of GO Train service may occur gradually or all at once, but two major cost elements arise at different points. The addition of a single new day time GO Train trip is projected by CN Rail to require the addition of a new mainline between Burlington Station and Hamilton Junction, at a cost of more than $30 million. Once this track is constructed, however, GO Train service may increase from the existing level to frequent peak period service along with some off-peak trains.

When two-way peak period or more frequent off-peak GO Train Service is introduced, an additional track costing in the order of $15 - 18 million would be necessary in the CP corridor between Hamilton Junction and the west portal of the Hunter Street Tunnel. This requirement follows from the fact that this type of service would imply trains scheduled to meet in the CP corridor and resultant unacceptable delays to either GO or CP traffic. Depending on the exact GO Train schedules and the other (freight and passenger) demands on the tracks at the time, this requirement is anticipated to occur prior to the capacity of the Hunter Street Tunnel being reached.

GO Train service can not be increased until the CP tracks, additional CN track, and CP/TH&B Station are ready. The Waterdown Road Station may be provided at any level of service, but would most easily occur in conjunction with the track work needed for the initial level of service increase. It should also be noted that increased train frequency could require the addition of one or two GO Train sets to the Lakeshore route at a cost in the order of $15 million apiece. This cost is not assigned specifically to the Hamilton project, however, but would be part of GO Transit's overall capital expenditures.

Further expansion of service would require the replacement of the Hunter Street Tunnel with a twin-track facility. Depending on schedules and freight demands, an increase to full service would need a second new track (fourth main line) in the CN corridor from Burlington Station to Hamilton Junction. Expansion to these levels of service are beyond the scope of the current recommendations and would be subject to separate Environmental

Assessment processes at the appropriate time.

Expansion of service to Waterdown Road prior to extension to Hamilton could occur at any point following approval under the Environmental Assessment Act, and would have little environmental impact over and above that noted in the report. The additional cost of providing whatever CN trackwork was necessary in the section would be accelerated, and extra track would be needed west of the station to allow GO Trains to reverse direction. Such an expansion would however, fall short of the objective of significantly improving service to Hamilton users unless a good level of service was already in place in downtown Hamilton.

No specific recommendations regarding staging of the recommendations are made in this report, although certain logical sequences are noted, in recognition of the fact that the ability to implement any of the stages will reflect the funding available at that time.

6.3.10 Associated Road Works

With the addition of track to the CN and CP corridors and the provision of the CP/TH&B and Waterdown Road Stations, the work required to allow improved GO Train service in Hamilton extends beyond the existing rail right of way. Of particular note are those roadways crossing the rail corridors and the roads needed to service the Stations. Only those roadways affected by the undertaking are discussed below.

a) Plains Road East

The addition of a new span to the south side of the CN Rail bridge deck over Plains Road East will require the temporary closure of one or two lanes at a time on Plains Road during construction and restrictions on vertical clearance under temporary formwork. If the new deck segment is the same thickness as the existing deck, the existing vertical clearance of 4.55 metres would be reduced to 4.4 metres. Increasing the clearance to Provincial standard of 4.65 metres would involved either constructing a thinner deck or lowering Plains Road slightly for up to 200 metres west of the structure.

b) King Road

Temporary disruption of the King Road level crossing of the CN corridor would occur during construction of the third CN track. Traffic could be maintained throughout the period. Minor regrading of King Road's south approach may be desired. Although the grade separation of the crossing is desired by the City, it is recognized that such a project is not the responsibility of GO Transit and is not part of the current study. The Burlington Council resolution in Appendix N includes a discussion of the issue.

c) Waterdown Road/Highway 403 Interchange

In order to provide access to the Waterdown Road GO Station, the existing W-NS loop ramp from Highway 403 would be replaced by a direct diamond off ramp located roughly opposite the existing ramp terminal on Waterdown Road. The Station access road, with provision for an ultimate eastbound on ramp would also intersect Waterdown Road at that point, to create a new fully signalized four-approach intersection. Due to the constraints on road width placed by the existing four-lane Waterdown Road structures over the CN tracks and Highway 403, Waterdown Road itself would not change significantly apart from minor changes in pavement marking.

Extension of the Station access road to provide access for the undeveloped CN Rail property to the east would be protected for in the layout of the GO Station parking area.

d) Hidden Valley Road

Temporary disruption to Hidden Valley Road would occur during the construction of an additional south deck for the CN trestle structure. However, the road would remain open to traffic at all times. The trestle for the new span will be designed to allow a standard 4.65 metre clearance above the road, far greater than the restrictive 2.54 metre height of the existing girders.

e) Valley Inn Road

Valley Inn Road underpasses the CN tracks on a grade, at a 36 skew, with a substandard 3.9 metre vertical clearance, and on a very constrained alignment. The widening of the structure to the east side will require the realignment of Valley Inn Road and, due to constrained working quarters, likely the closure of the road for some period during construction. Valley Inn Road should be realigned to the east of the existing structure to reflect the ultimate addition of two tracks to the CN line, as the second new track, when required, must also be on the east side due to the constraints on the west side of the crossing. Retaining walls to support the railway embankment north of the crossing and the realigned portion of Valley Inn Road are necessary. As Valley Inn Road is dropping on the east side, the new span would provide 4.65 metres vertical clearance, but the sub-standard 3.9 metre clearance at the west side would continue to govern the crossing.

f) King Street/Church Access

King Street is the main westbound traffic artery in downtown Hamilton, crossing over the 2 track CP Toronto Connection with a 6 lane superelevated structure. Adjacent to the north side is a two lane structure which serves as one of the two access points to Christ the King Cathedral and School. Although unaffected by the initial switch of GO service to the CP line, in the long term with an increase in the number of trains, both structures would need to be replaced by ones spanning three tracks.

Numerous detouring options are available making use of one or both structures and/or temporary spans, with design criteria of maintaining the greatest number of through lanes with minimum disruption and property impact. Due to the width of the structure, a full detour of King Street is impossible and a two-stage reconstruction is necessary. The preferred alternative involves the provision of a temporary two - lane span on the south side of King Street, allowing the shift of traffic to the south while reconstructing the north half of the bridge. Five lanes of traffic could be maintained, with slightly narrower lanes and temporary use of the corner of the property in the southeast quadrant. With completion of the north half, traffic would be split with three lanes on the reconstructed piece and two remaining on the temporary bridge while the south half of the King Street Structure was reconstructed.

The Church Access structure could be closed temporarily and reconstructed at any point, with access to the property remaining via Hunt Street.

g) Hunter Street

As described in Section 6.3.1.1, the elimination of parking on the north side of Hunter Street between James and John Streets will allow the two through lanes to be shifted to the curb and an expansion of the parking area in front of the CP/TH&B Station to occur. Improvements to the curbs at the James and John Street intersections to reflect the realigned Hunter Street lanes would be a part of the work.

h) Beckley Street

Beckley Street would be closed and incorporated into the CP/TH&B Station bus terminal development. Access to the parking garage for 135 James Street South would be maintained throughout construction and incorporated in any bus terminal design. Although not formally discussed with the City, agreement with the recommendation was indicated by the City representative on the Technical Advisory Committee for the study.

6.4 Summary of Environmentally Significant Areas/Issues and Commitments to Mitigating Measures and Future Work

6.4.1 Introduction

The following sections expand on environmentally significant issues as related to the changes in the natural and social environment that would occur with implementation of the study recommendations. The comments are a synthesis of: the identified environmentally significant areas/issues of Section 4.6; the potential environmental effects discussed in Section 5.5; and the preliminary design features of the recommendations outlined in Section 6.3. Table 2 in Section 1 also summarizes the impacts of the undertaking specifically related to environmentally significant areas/issues.

Table 24 summarizes the issues, effects and mitigating measures for the entire project.

6.4.2 Natural Environment

6.4.2.1 Climate

The effect of the undertaking on climate is not a significant issue.

TABLE 22 : IMPACT OF UNDERTAKING ON VEGETATION UNITS

Vegetation Unit	Description	Botanical Quality	Impact of Undertaking	Proposed Mitigation/ Future Work
-	Manitoba Maple-Aspen Succession (Embankment)	Low	Removal of northern fringe	None proposed
V-6	Manitoba Maple-Aspen Succession (Embankment)	Low	Removal of eastern fringe	Replant slope
V-7	Manitoba Maple-Aspen Succession (Embankment)	Low	Removal of part of unit on embankment	Replant slope
V-11	Mature Oak Forest	Moderate	Removal of part of unit on embankment	Replant slope; consider alternatives in detailed design
V-12	Sumac-Aspen Succession (Embankment)	Moderate	Removal of northern part of unit	Construct toe wall to minimize effect on slope; consider landscaping strategy in detailed design
V-13	Sumac-Aspen Succession (Embankment)	Moderate	Removal of small portion of unit at York Boulevard approach fill	Replant slope
V-17	Cattail Marsh	Moderate	Minor encroachment of fill on fringe of marsh is a possible impact	Address means of minimizing impact in detailed design
V-19	Manitoba Maple-Willow-Aspen-Sumac-Ash Succession (Embankment)	Moderate	Removal of sections of unit where embankment widening required	Replant slope; consider alternatives in detailed design
V-21	Cattail Marsh	Low	Minor encroachment of fill on fringe of marsh is a possible impact	Address means of minimizing impact in detailed design; consider alternatives in location of construction access road
V-25	Mature Oak Ravine Forest	High (Chinquapin Oak Reg. Signif.)	Possible removal of small portion of unit near Spring Garden Road; quality of affected portion unknown	Confirm need for impact after development of detailed grading plans; confirm quality of affected portion of unit; replant slope
V-29	Mature Oak Ravine Forest	High (8 species Reg. Signif.; Flowering Dogwood Nat. rare)	Removal of sections of unit on railway embankment; minor impact at base	Impact limited to man-made embankments in rail r.o.w.; confirm quality of affected portions of unit: consider alternatives with R.B.G. and Halton R.C.A. at detailed design stage; replant slopes
V-33	Mature Oak Ravine Forest	High (5 species Reg. Signif.)	Removal of section of unit on railway embankment, minor impact at base	Treat together with Unit V-29, as above
V-35	Mature Oak Ravine Forest (disturbed remnants)	High (4 species Reg. Signif.)	Removal of section of unit in railway cut; minor expansion of cut	Confirm quality of affected portions of unit; minimize extent of cut widening; consider alternatives at detailed design stage; replant slopes
V-38	Immature Mixed Hardwood Ravine Forest (Disturbed)	Low	Possible minor impact on fringe adjacent to tracks	Minimize disruption during construction
V-40	Mature Sugar Maple Ravine Forest (Disturbed)	Low	Possible removal of small portion of northern part of unit	Determine grading requirements in detailed design; replant slope
V-41	Old Field Succession	Low	Removal of edge of unit within rail r.o.w.	None proposed
V-43	Mature Willow Bottomland	Low	Removal of portion of unit within rail r.o.w.	Protect remaining portion of unit during construction
V-44,45	Mature Oak Ravine Forest (Disturbed)	Moderate	Removal of very small portion of unit within rail r.o.w.	Protect remaining portion of unit during construction
V-49	Immature Ash Bottomland	Low	Removal of most of unit	Retain portion of unit as part of Station landscaping plan
V-50	Mature Sugar Maple Ravine Forest (Disturbed)	Low-Moderate (Stoneroot Reg. Signif.)	Removal of southern portion of unit	Retain northern portion of unit; minimize extent of construction disruption
V-51	Old Field Succession	Low (scattered large specimens)	Removal of unit	Consider retention of large trees if appropriate as part of Station landscape plan
V-68	Willow-Cottonwood Succession	Low	Removal of fringe portions of unit within rail r.o.w.	Minimize extent of impact during construction
V-66	Mature Willow Bottomland	Low	Removal of portion of unit near tracks	Minimize extent of impact during construction
V-76	Coniferous Screen Planting/Scrub Succession	Low	Removal of trackside fringe of unit	Protect remaining portion of unit during construction

6.4.2.2 Physiography and Soils

Concerns focussed on the potential for erosion due to changes in cut and fill slopes with construction of a new track in the area between Waterdown Road and Hamilton Junction. The treatment of slopes with regard to minimizing erosion potential will be a fundamental part of the detailed design and construction process, and specific locations will require individual designs at that time. No concerns have been identified that cannot be treated by standard design and construction techniques, as the stability of the existing railway embankments in the corridor demonstrates.

Treatments such as:

- slope benching;
- use of clean, non-erodible fill;
- gabions and retaining walls;
- landscaping and revegetation of exposed new slopes;
- slope paving;
- slope drainage; and
- compaction of material during construction

will be considered during the detailed design stage and used as appropriate. The extent and type of effects of the undertaking on physiography and soils in the study area are discussed in detail in Section 6.3.4.

6.4.2.3 Vegetation

The implementation of the study recommendations will affect some vegetation adjacent to the south side of the CN Burlington rail corridor and on the site of the Waterdown Road GO Station, as well as within portions of the CP Hamilton corridor. Exhibits 15 to 28 in Section 6.2 show the exact extent of the impact. Table 22 defines, on a unit-by-unit basis (vegetation units shown in Exhibit 4) the effects of the undertaking and the mitigation measures proposed to minimize the impact. Only those units affected by the undertaking are included in Table 22.

6.4.2.4 Water Resources and Fisheries

The effect of the undertaking on streams and fresh water basins in the Grindstone Creek-Hamilton Harbour area was identified as an environmentally significant issue (see Section 4.1.4).

Various culvert extensions will be required along the corridor (Rambo Creek, Hager Creek, Indian Creek, Falcon Creek, various Grindstone Creek tributaries) but due to the low volume or intermittent nature of these streams and their context in an urban environment, no significant concerns are noted. At the crossing of Grindstone Creek (Hidden Valley), interference with migratory salmon and trout runs is to be minimized by restricting in-stream construction activity to June, July and August and through use of current erosion/sedimentation control techniques. The ability to use the existing pier footings at this crossing helps to minimize impact on the streambed.

At the Waterdown Road Station site, the stream passing through the north and west portions of the property is to be retained in open channel except for a single culvert crossing of the Station access road. The parking lot is laid out to minimize the effect on the stream and to retain the vegetation along its banks. Consideration of measures to mitigate the impact of runoff from the parking area to the stream will be undertaken in the detailed design of the lot. Halton R.C.A. flood guidelines will be adhered to. The Ministry of Natural Resources, the Ministry of the Environment, the Halton Region Conservation Authority and the Halton Region Ecological and Environmental Advisory Committee will be contacted as appropriate during the design stage.

Where the CN railway embankment borders Sunfish Pond and Hamilton harbour (between Spring Garden Road and Desjardins Canal), the expansion of the embankment to accommodate a new main line track will result in fill extending into the water in two locations. Means of minimizing the extent of the fill will be a priority in the detailed design of the embankment widening. If the shoreline is altered, clean, non-erodible fill is to be used and measures to minimize the effect on the underwater littoral zone will be assessed with regard to feasibility during the detailed design stage. Communications will be maintained with Environment Canada, the Ministry of the Environment, the Ministry of Natural Resources, the Halton Region Conservation Authority, and the Royal Botanical Gardens in the detailed design stage.

The extent and timing of construction within Desjardins Canal will be kept to a minimum, and consideration may be given during the detailed design stage to structural alternatives that avoid in-water work. Sedimentation control will be in effect during the construction period.

6.4.2.5 Wildlife

The impact of the undertaking on wildlife in the study area will be indirect for the most part, and linked to the retention of as much existing vegetation as possible to provide movement corridors for wildlife. The effects of the undertaking on vegetation and recommended mitigating measures are discussed in Section 6.4.2.3.

The only species-specific wildlife concern is that of the possible impact of embankment widening on the basking and nesting areas of the Eastern Spiny Softshell Turtle in the vicinity of Hamilton Harbour and Sunfish Pond. A pre-construction survey of the shoreline will be undertaken and, if necessary, appropriate measures to protect the habitat will be incorporated into the detailed design of the embankments.

6.4.2.6 Environmentally Sensitive Areas

a) Halton Region E.S.A. 4 (Sassafras Woods)

The undertaking will have no impact on this E.S.A.

b) Halton Region E.S.A. 3 (Grindstone Creek Valley)

The effects of the undertaking on Halton E.S.A. 3 are limited in extent to the rail crossing at Hidden Valley, various ravines near Plains Road, and the rail embankments in the vicinity of Sunfish Pond. The specific effects and proposed mitigation measures are detailed in Sections 6.4.2.2, 6.4.2.3 and 6.4.2.4.

c) Hamilton-Wentworth Region E.S.A. 16 (R.B.G. - Cootes Paradise)

Within this E.S.A., the undertaking will affect only the railway embankment between Sunfish Pond and Desjardins Canal. The extent of the impact and mitigation measures proposed are described in Sections 6.4.2.2, 6.4.2.3 and 6.4.2.4.

6.4.3 Social Environment

6.4.3.1 Communities

a) Noise

The major community issue raised during the study was that of the impact of the undertaking on noise levels of residents adjacent to the rail corridor. The issue is addressed in detail in Appendix G, being a report on the noise analysis undertaken. The analysis was limited to four areas along the recommended route where residences are relatively close to the existing tracks:

- Enfield Road - near the CN Aldershot Yard in Burlington;
- Breadalbane Street - near the CP corridor at King Street in Hamilton;
- Hunter and Canada Streets - adjacent to the open cut CP line west of the Hunter Street Tunnel in Hamilton; and
- adjacent to the proposed GO Train storage yard on the CP line between Victoria Avenue and Wentworth Avenue in Hamilton.

The general approach was to assess current noise levels, future noise levels without GO Train service expansion, and future noise levels with a twenty daily train GO service. The difference between the latter two was defined as the impact due to the expansion of GO Train service. Existing rail traffic figures were determined from CN and CP documentation, VIA and GO schedules, and field surveys for a typical weekday. Future rail traffic includes additional freight trains projected by the railways to be in place in approximately ten years.

Ministry of the Environment procedures were followed in calculating noise levels (see Appendix G), and the following terms were used:

Leq(24): since sound levels vary continuously, sound is measured in terms of the equivalent sound level which has the same sound energy as the varying sound over a 24 hour period.

dBA: the decibel (A-weighted) is a measurement of the loudness of any sound as perceived by the human ear. A change in sound level of less than 2 or 3 decibels is generally not noticeable.

It should be noted that the possibility of incrementally staging the implementation of the full set of recommendations means that the full impact of GO Train service expansion as described below may not occur initially.

The following notes summarize the noise analysis results in each affected area in the recommended corridor.

1. Enfield Road - Burlington CN

		day (7-23 h)	night (23-7 h)
Existing rail traffic	- freight	22	16
	- passenger	31	5
Future rail traffic	- freight	30	24
	- passenger	31	5
Future rail traffic with 20 daily GO Trains	- freight	30	24
	- passenger	41	3
Existing noise level		64.5 dBA	67 dBA
Future noise level (no GO expansion)		65.5 dBA	68.5 dBA
Future noise level with 20 daily GO Trains		66 dBA	68.5 dBA
Change due to GO expansion		+0.5 dBA	no change

Notes:

Existing and future noise levels are dominated by long freight trains. Since 12 GO Train movements currently occur (6 empty shuttles to/from Hamilton and 6 revenue moves), an increase to 20 daily trips will only add 8 trains to the 90 daily trains projected in the corridor. The current early-morning shuttle of GO Trains to Hamilton would be eliminated with GO use of the Victoria Avenue Yard for overnight storage. The projected noise level increase due to GO expansion is not considered a significant impact on the community.

In October-November 1988, field noise measurements were carried out for a week in the rear yard of an Enfield Road home to determine the actual current noise levels, including noise generated by rail activities in the Aldershot Yard. An average Leq in the order of 69 dBA was measured, indicating that the Yard noise adds approximately 4-5 dBA to the level produced by through trains. This also indicates that the noise impact due to GO Train service expansion will be even less than the 0.5 dBA predicted based on through trains only.

2. Breadalbane Street - Hamilton CP

		day (7-23 h)	night (23-7 h)
Existing rail traffic	- freight	4	2
Future rail traffic	- freight	11	6
Future rail traffic with 20 daily GO Trains	- freight	11	6
	- passenger	18	2
Existing noise level		54 dBA	58 dBA
Future noise level (no GO expansion)		58 dBA	63 dBA
Future noise level with 20 daily GO Trains		59 dBA	63.5 dBA
Change due to GO expansion		+1 dBA	+0.5 dBA

Notes:

Existing and future noise levels are dominated by long freight trains. The projected noise level increase due to GO expansion is not considered a significant impact on the community. Most of the difference between calculated day and night noise levels results from the shielding effect during the day of the rail cut on the backyard receiver compared to the unshielded second storey nighttime receiver.

3. Hunter Street/Canada Street - Hamilton CP

		day (7-23 h)	night (23-7 h)
Existing rail traffic	- freight	14	10
Future rail traffic	- freight	21	14
Future rail traffic with 20 daily GO Trains	- freight	21	14
	- passenger	18	2
Existing noise level		61.5 dBA	64 dBA
Future noise level (no GO expansion)		65 dBA	65.5 dBA
Future noise level with 20 daily GO Trains		65.5 dBA	66 dBA
Change due to GO expansion		+0.5 dBA	+0.5 dBA

Notes:

Existing and future noise levels are dominated by long freight trains. The noise level increase due to GO expansion is not considered a significant impact on the community.

4. Victoria Avenue Yard - Hamilton CP

Reconstruction of the Victoria Avenue Yard between Victoria Avenue and Wentworth Avenue to accommodate the overnight storage of up to five GO Trains is recommended. It is proposed to shift the existing CP main lines to the south and locate the storage yard between the homes on the north and the relocated main lines. The shift of the major noise generator (freight trains) away from the homes more than makes up for the addition of stored GO Trains, resulting in a net decrease in noise level at most adjacent homes due to GO expansion. The noise generated by the major traffic arteries in the area (Charlton Street, Claremont Mountain Access) was incorporated into existing and future noise levels. Three sites in residential areas adjacent to the Yard were analyzed: site 4 near Webber Avenue in the west; site 5 at the west end of Alanson Street; and site 6 near Ontario Street at the east end of the Yard. Although the parallel GO Trains would act as a very substantial noise barrier when stored overnight, this factor was not included in the analysis. Its effect would be to further reduce overnight noise levels.

Train volumes used in the analysis were:

		day	night
Existing rail traffic	- freight	14	10
Future rail traffic	- freight	21	14

The following Table 23 summarizes the results of the analysis. The overall impact of the introduction of GO Train service on noise levels at nearby homes is negligible.

TABLE 23: SUMMARY OF NOISE ANALYSIS - VICTORIA AVENUE YARD

SITE	FACTOR	EXISTING		[illegible]		[illegible]		[illegible]	
		DAY	NIGHT	[illegible]	[illegible]	[illegible]	NIGHT	[illegible]	NIGHT
West	Ambient Road Traffic	67	58	[illegible]	[illegible]	[illegible]	[illegible]		
	CP Trains	54.5	54.5	[illegible]	[illegible]	[illegible]	58.5		
	GO Trains	-	-	-	-	[illegible]	[illegible]		
	Total	67	60	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-1.0
Centre	Road Traffic	60	51	[illegible]	[illegible]	[illegible]	[illegible]		
	CP Trains	63	62.5	[illegible]	[illegible]	[illegible]	-		
	GO Trains	-	-	-	-	60	63		
	Total	65	62.5	67	66.5	65.5	66	-1.5	-0.5
East	Road Traffic	57	49	57	49	57	49		
	CP Trains	58.5	58	62	62.5	59.5	60		
	GO Trains	-	-	-	-	53	56		
	Total	61	58.5	63	62.5	62.5	61.5	-0.5	-1.0

b) Vibration

Earlier studies carried out to assess the vibration impact of various GO Train service expansions state that "the duration and level of ground vibration is expected to be lower than those produced by the freight trains currently running on or beside the right-of-way" (_General Information on the Assessment of Noise and Vibration for the GO Transit Expansion_; Hatch Associates, 1986). Accordingly, vibration due to GO Trains is not considered to have a significant impact on adjacent residents.

c) Air Pollution

As with noise and vibration, any contribution by GO Trains to air pollution in the study area is extremely minor in comparison to that of the more frequent heavy freight trains which dominate traffic in the corridor. In fact, a net reduction in air pollution in the area could result from the GO service expansion, as it would become a more attractive and efficient transportation service to those who currently drive automobiles. Accordingly, the impact of the expansion of GO Train service on the community in terms of air pollution is not considered significant.

d) Safety

The expansion of GO Train service will occur within existing fenced rail rights-of-way, and standard GO safety measures will be incorporated into the design and operation of GO Stations. Accordingly, the undertaking is not considered to have a significant impact on the community in terms of safety.

e) Stations

Various issues related to the impact of GO Train Stations on the surrounding community were voiced during the study. The issues of additional traffic generation, additional parking demand and increased pressure for redevelopment applied mainly to the CP/TH&B Station area in central Hamilton, and to a lesser extent at the Waterdown Road Station site. Great attention was paid to these issues in developing the recommendations as documented in Sections 5.4, 5.6.2 and 6.3.1.

GO commuter parking will be served by the Waterdown Road Station, while the CP/TH&B site is oriented to transit, drop-off, and pedestrian access. The provision of parking for GO commuters within downtown Hamilton is not recommended as part of this study and the question of the provision of additional parking in the CP/TH&B Station area for non-GO related demand is beyond the scope of this study. The potential for provision by others of structured parking on the CP/TH&B Station site is nevertheless protected for in the concept plan.

Parking and associated traffic demand will be focussed outside of central Hamilton, at the Waterdown Road Station site. In the order of 90 percent of the traffic there is anticipated to be oriented to and from the west via Highway 403 and served directly by a modified interchange. As a result the impact of GO Train expansion on traffic and parking in the vicinity of its Stations is considered to be minor.

The impact of the expansion of GO Train service on pressure for redevelopment in the Durand Neighbourhood is not considered significant, as pressure in the area is driven by the overall economic conditions in Hamilton rather than the use of any one site. In this regard, it may also be noted that the CP/TH&B Station has already served as a busy passenger terminal for nearly ninety years prior to 1981, and both the Hamilton Bus Terminal and GO Train Station have been used for over two decades without having an appreciable impact on development in their respective vicinities.

6.4.3.2 Heritage Resources

a) Historic Resources

The historic resources of the study area are described in Section 4.2.2. Since, with the exception of the CP/TH&B Station area, the impact of the recommended undertaking does not extend beyond the existing railway right-of-way, the overall impact on historic resources is considered to be minor. The historic resources potentially affected are noted as follows:

1. VIA Rail Burlington Station (H-34): this building is planned to be taken out of operation by VIA Rail with their shift to the Burlington GO Station. It is assumed to not be in place at the time of track expansion in the CN corridor.
2. CN Valley Inn Road structure (H-30): this structure will have a deck and abutments added to the south side with track expansion in the CN corridor. It is not currently recognized as a historic structure.
3. Desjardins Canal (H-29): addition of a deck to the CP crossing is not anticipated to affect the historic nature of the canal.
4. CP Desjardins Canal structure (H-26): this structure will have a deck and abutments added to the east side with track expansion in the CP corridor. It is not currently recognized as a historic structure.
5. CP/TH&B Station (H-2): the building will be retained and rehabilitated for use as a passenger terminal.

b) Architectural Resources

The CP/TH&B Station is the only architecturally significant feature affected by the undertaking. The building will be retained and contact will be made with the CP/TH&B Station Subcommittee of the Hamilton Local Architectural Conservation Advisory Committee prior to its rehabilitation. The impact of the undertaking on the Station will be positive in that it will be restored and revitalized.

c) Archaeological Resources

Prior to expansion of the railway in the vicinity of the mass cholera grave near Desjardins Canal, the site location will be assessed and test pits dug, if appropriate. The Ministry of Culture and Communications will be contacted in conjunction with this pre-construction work and further work, if necessary, will be considered at that time.

d) Aesthetic/Scenic Resources

The railway embankments in the vicinity of the Royal Botanical Gardens are a component of the view from the Royal Botanical Gardens and Harbour, and will be replanted and/or landscaped as appropriate following their widening to accommodate a new main line track. The Royal Botanical Gardens will be contacted during the detailed landscaping planning. Since the view will be reinstated in the long term with vegetation regrowth, the impact of the undertaking is considered to be minor.

6.4.4 Summary

Table 24 summarizes the identified environmentally significant areas/issues, the effects of the recommended undertaking relative to those issues, and the mitigating measures and/or future work committed to in order to minimize the anticipated effects. It should be noted that a number of environmental effects will occur only in the long term as a result of the provision of additional track along existing railway corridors, while immediate impacts may be somewhat less than the sum of all those identified in Table 24. This comment is based on the potential for staging the implementation of the recommendations, as discussed in Section 6.3.9.

Those issues in the areas of railways, roadways, transit systems, and utilities identified as significant in Sections 4.4 and 4.5 of the report and not included in Table 24 have either been incorporated into the preliminary design as discussed elsewhere in Section 6 or will be addressed at a technical level during detailed design.

TABLE 24 : SUMMARY OF ENVIRONMENTAL EFFECTS / MITIGATING MEASURES

Corridor Segment	Environmentally Significant Areas/Issues	Concerned Group/Agency	Environmental Effects of Undertaking	Mitigating Measures, Commitments to Future Work	Comments	Agencies/Group Involved In Future Work
Burlington (Fairview) GO Station to King Road	VIA Rail Burlington Station is of historic/architectural interest.	Burlington L.A.C.A.C.; Ministry of Culture and Communications	None.	None required.	VIA Station proposed to be taken out of service fall 1988. It is assumed not to be in place by the time of implementation of GO study and therefore not affected.	
	Delays at King Rd./CN level crossing.	City of Burlington; local business and residents	Increased GO Train frequency will result in increased delays to King Road traffic.	None required.	Need for grade separation not solely due to GO trains. Other GO level crossings have more traffic. Not a condition of City endorsement of study recommendations (Appendix N).	
King Road to Waterdown Road GO Station	Noise due to rail activities.	Local Residents	Maximum 24 hour average noise level increase due to GO of 1 dBA for houses. Not considered a significant change.	None proposed.	See Section 6.4 for noise analysis. Most noise is produced by freight rail activity.	
	Safety.	Local Residents	None	None required.	The existing right-of-way fence is maintained by CN rail and would be unaffected by trackwork.	
	Traffic generated by Waterdown Road Station.	Local Residents	Very minor increase in traffic using Burlington arterial roads (Waterdown, Plains) near the Station.	None proposed.	Almost all GO Station traffic is projected to be from Hamilton-Wentworth arriving via Highway 403 and therefore not affecting local streets.	
	Impact on creek in Station area.	Halton Region Conservation Authority	Creek to be channelized and diverted from parking area.	Regional flood level not to exceed 0.43 in parking area. Creek to be in open ditch as much as possible.		Halton Region Conservation Authority
Waterdown Road GO Station and Hwy. 403/Waterdown Rd. Interchange	Impact on Sassafras Woods ESA north of Hwy. 403.	Halton Region	None	None required.	Reconstruction of north half of interchange is not included in study recommendations.	
	Traffic and operation of revised interchange and protection for ultimate requirements.	Ministry of Transportation	Interchange projected to operate at an acceptable level of service throughout study period.	Traffic conditions to be monitored by MTO.	Recommended interchange plan developed in consultation with MTO.	Ministry of Transportation
Waterdown Road to Halton Ceramics	Crossing of Grindstone Creek a major area of concern re: ravine walls, sedimentation, erosion, fish spawning, etc.	Halton Region Conservation Authority; Ministry of the Environment; Ministry of Natural Resources; Halton E.E.A.C.	Through use of existing abutments and pier footings impact is minimized.	Construction in streambed restricted to June, July, and August at Grind stone Creek. Creek protected from sedimentation during construction.		Halton Region Conservation Authority; Ministry of the Environment; Ministry of Natural Resources
	Loss of vegetation due to widening of rail embankment at ravine crossings.	Halton Region Conservation Authority	South slope of embankment widened; vegetation removed at ravine heads.	Replanting of slope after construction. See Table 23.	No significant species; railway embankments are man-made, not natural slopes.	
	Visual impact	Public	Rail embankment at Hidden Valley Park widened; vegetation removed.	Replanting of slope after construction.	Vegetation will regenerate - no long-term effect.	
	Access to Hidden Valley during construction	Local Residents; City of Burlington	None	Hidden Valley Road maintained open at all times.	New span to allow standard 4.5 m vertical clearance at Hidden Valley Road.	City of Burlington
	Halton Ceramics is a historic property and a visual landmark.	Burlington L.A.C.A.C.	None	None required.		

TABLE 24 : SUMMARY OF ENVIRONMENTAL EFFECTS / MITIGATING MEASURES (cont'd)

Corridor Segment	Environmentally Significant Areas/Issues	Concerned Group/Agency	Environmental Effects of Undertaking	Mitigating Measures Commitments to Future Work	Comments	Agencies/Groups Involved In Future Work
Halton Ceramics to Bayview Junction	Impact of embankment widening on vegetation.	Ministry of Environment; Halton Region Conservation Authority; Halton E.E.A.C.	Railway embankments to be widened by approx. 4 m	Retention of trees where possible and replanting/ landscaping new fill slopes. See Table 23.	Vegetation will regenerate - no long-term effect.	M.O.E.; Halton R.C.A.; Halton E.E.A.C.
	Impact on embankment widening on water quality and fish habitat.	Environment Canada (representing Harbour Stakeholders); Halton Conservation Authority	Some fill on north shore of Sunfish Pond will affect fish habitat.	Boom used to minimize sedimentation in Sunfish Pond during construction. Consider means of minimizing effect on littoral zone in detailed design. Use clean, non-erodible fill.	New shoreline may enhance fish habitat.	Environment Canada; M.N.R.; M.O.E.; Halton R.C.A.
	Impact on embankment widening on wildlife habitat.	Halton Region	May affect Eastern Spiny softshell turtle nesting/ basking sites.	Conduct pre-construction survey for sites and incorporate protection measures in detail design.	Provincially rare species. No data available on nesting sites.	Halton Region
	Views of the shoreline from the RBG	R.B.G.	View of tracks from RBG and Harbour altered until vegetation regrowth (5-10 years).	Replant slopes after construction.	Retaining walls may prevent Harbour impact but slopes would be stripped for construction in any case. Vegetation regrowth will eliminate effects in long run while a retaining wall would be permanently visible.	R.B.G.
	Property impact on RBG and cemeteries.	R.B.G.; Property Owners	Toe of slope at some ravine crossings widened on to RBG property.	Toe wall provided at Beth Jacob Cemetery. Effects contained within rail right-of-way where possible. Address in detail design in consultation with RBG.	No serious concerns expressed by RBG with preliminary plans.	R.B.G
	Potential for slope erosion	Ministry of Natural Resources	Existing embankments widened on south side.	Use clean, non-erodible fill. Stabilize or bench embankment where necessary. Address during detail design.	Stable slopes promote revegetation and vice versa.	M.N.R.
Bayview Junction to Hamilton Junction	Impact of embankment widening on shoreline vegetation	Ministry of the Environment; Halton Region Conservation Authority	Vegetation along south side of embankment removed during construction	Retention of trees where possible and replanting/ landscaping new fill slopes	Vegetation will regenerate - no long-term effect. No rare or significant species affected.	M.O.E.; Halton R.C.A.
	Impact of embankment widening on water quality and fish habitat.	Environment Canada representing Harbour Stakeholders; Halton Conservation Authority	No fill extends into harbour	Controls on construction activity near water to minimize shoreline disruption. Existing shoreline to be retained.		Environment Canada; M.N.R.; M.O.E.; Halton R.C.A.
	Views of shoreline from the Harbour and RBG	R.B.G; public	View altered until vegetation regrowth occurs	Replant slopes after construction.	Retaining walls for fill not preferred for reasons cited in previous segment.	R.B.G.
	Potential for slope erosion	Ministry of Natural Resources	Existing embankments widened on south side	Use clean, non-erodible fill. Stabilize or bench embankment where necessary. Address during detail design.	Stable slopes promote revegetation and vice versa.	M.N.R.
	Valley Inn Road structure of potential historic note	Burlington L.A.C.A.C.	Historic structure over Valley Inn Road expanded and original abutments changed	None proposed.		

TABLE 24 : SUMMARY OF ENVIRONMENTAL EFFECTS / MITIGATING MEASURES (cont'd)

Corridor Segment	Environmentally Significant Areas/Issues	Concerned Group/Agency	Environmental Effects of Undertaking	Mitigating Measures Commitments to Future Work	Comments	Agencies/Groups Involved In Future Work
Hamilton Junction to Main Street	Effect of construction activity and structure on Desjardins Canal water quality and fish migration channel.	Hamilton Region Conservation Authority	Canal crossing has potential impact due to additional piers under expanded deck. No impact until additional track constructed.	Address structural requirements in detailed design. Minimize impact on Canal during construction.	Additional track not required in initial stages, therefore initial impact is negligible. Most impact follows from new track, which would be needed for GO Trains meeting between Queen St. and Hamilton Junction. This requirement will depend on GO schedules and may come near the end of or beyond the study period.	Hamilton R.C.A.
	Potential impact on Kay Drage landfill site.	Ministry of the Environment; City of Hamilton	No impact until additional track constructed. Possibility of encountering landfill with trackbed widening - limits of landfill inknown.	Address during detail design of trackbed for additional track. Approval under EPA Section 45 may be required if landfill encountered.		Ministry of Culture and and Communications City of Hamilton
	CP/TH&B structure at Desjardins Canal of potential historic note.	Hamilton L.A.C.A.C.; Ministry of Culture and Communications	Structure widened and piers altered when track added. No initial impact.	No heritage designation. Address status during detailed desing.		Hamilton L.A.C.A.C.; M.C.C.
	Potential impact on mass cholera grave (near Canal)	Ministry of Culture and Communications	Possible disruption during construction.	Assess site location and conduct preconstruction test pits if appropriate.		M.C.C.
	Noise and vibration impact on residents between Jones St. and King St.	Local Residents	Maximum 24 hour average noise level increase due to GO of 1 dBA for houses. Not considered a significant change. No vibration impact noted in comparison to effects of existing freight traffic.	Use continuous welded rail to minimize noise.		
Main Street to Queen Street	Noise and vibration impact on residents between Dundurn and Queen Streets.	Local Residents	Maximum 24 hour average noise level increase due to GO of 2dBA for houses. Not considered a significant change. Vibration from GO Trains not an impact compared to existing freight impact.	Comply with City bylaws re: construction noise. Use continuous welded rail to minimize noise.		
	Traffic diversion and disruption during bridge reconstruction.	City of Hamilton; local residents	None.Existing structures to be used.	None required.	Reconstruction of Poulette Street crossing (removed in 1986) subject to CP/City agreement and is independent of GO study.	
Queen Street to Charles Street (Hunter Street Tunnel)	Noise and vibration	Local Residents	Some construction noise during daytime trackwork. No vibration effects due to GO Trains apparent compared to freight trains. No significant noise impact on adjacent residents.	Restriction on time and extent of construction activity. Use continuous welded rail to minimize noise.		
	Community disruption during construction.	Local Residents	None	None proposed.	No requirement to replace or reconstruct tunnel as part of project.	

TABLE 24 SUMMARY OF ENVIRONMENTAL EFFECTS / MITIGATING MEASURES (cont'd)

Corridor Segment	Environmentally Significant Areas/Issues	Concerned Group/Agency	Environmental Effects of Undertaking	Mitigating Measures Commitments to Future Work	Comments	Agencies/Groups Involved In Future Work
Charles Street to Catharine Street (CP/TH&B Station)	Impact of Station use on development in area.	Durand Neighbourhood Association; Mcnab South Heritage Committee.	Station not a major factor in ongoing redevelopment of area.	None proposed.	Station used as transportation terminal in accordance with Hamilton Official Plan.	
	Noise, vibration and visual impact on Macnab South homes and church.	Mcnab Street Presbyterian Church; Mcnab South Heritage Committee.	Noise impact due to GO Trains not considered a significant increase over existing rail and traffic noise. Vibration effects due to GO Trains negligible compared to freight trains. Noise due to construction activity.	Use of new rails and switches to minimizes noise. Comply with City bylaws re: construction noise.		
	Increased demand for parking in neighbourhood.	City of Hamilton; Durand Neighbourhood Association	Minor increase in parking demand in the area.	Provision for encouragement of joint venture or private parking facility on site. Waterdown Road station provided for auto access to GO system and parking.	Station is focal point for transit and drop off access to the GO Trains and Bus systems. Parking for GO is focussed elsewhere at Waterdown Road Sation. Possible provision through independent joint venture of a parking deck above bus terminal.	Hamilton Parking Authority; private developers; City of Hamilton
	Traffic impact.	City of Hamilton; Region Hamilton-Wentworth	Minor increase in traffic on arterial roadways.	Waterdown Road Station provided for auto access to GO system from Hamilton.	GO traffic peaks at different times than local traffic. GO trafficuses major arterials and is a very small proportion of total traffic.	City of Hamilton; Region of Hamilton-Wentworth
	Effect on heritage aspects of CP/TH&B Station as well as historic buildings nearby.	Hamilton LACAC; Macnab South Heritage Committee	No impact on historic buildings. CP/TH&B Station restored and returned to its original function.	Involvement of historic groups during Station rehabilitation.		Hamilton LACAC
Catharine Street to Wentworth Ave.	Impact of noise of stored trains on adjacent homes.	Local Residents	Maximum 24 hour average noise level increase at adjacent homes due to GO of 1 dBA at yard. Not considered a significant impact.	Comply with City bylaws re: construction activity. Stored GO trains act as a noise barrier. CP main lines shifted away from homes.	Ferguson Avenue line assumed to be abandoned by CN by the time of GO implementation. CN/CP interchange tracks assumed to be relocated prior to GO work. Five GO tracks is a worst case - some schedules may only need three tracks or less. No train marshalling.	
	Effect of yard lighting on area.	Local Residents	None	Yard lighting oriented away from homes. Address in detailed design.		

Appendices

Appendix A

Overview Report (including Terms of Reference)

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

OVERVIEW REPORT

JUNE, 1987

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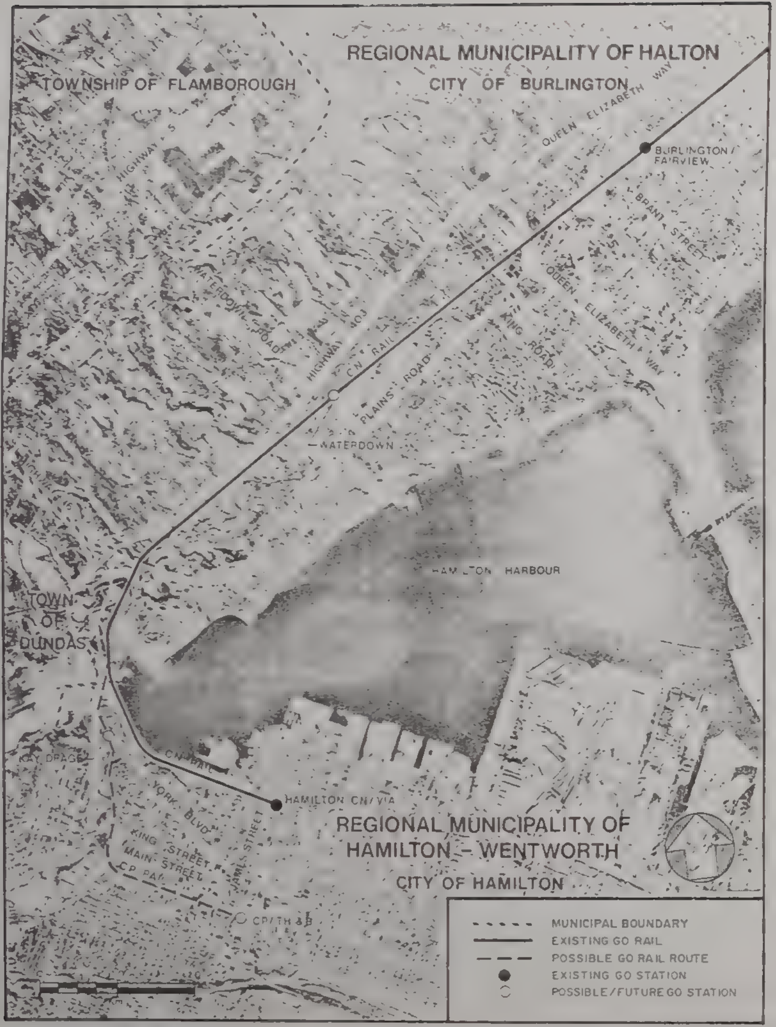


GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

KEY PLAN

1. INTRODUCTION

1.1 Background

Since the introduction of commuter rail service in the Lakeshore corridor in 1967, the use of the service and demand for improved, extended service has grown. Full commuter rail service is currently in place only between Pickering and Oakville, with three trains daily linking Hamilton to the Toronto-centred network.

In response to the growing demand, the Government of Ontario announced, in the fall of 1982, that it intended to implement an inter-regional rapid transit strategy. One of the major components of this strategy was the provision of GO Transit rail service from Oakville to Hamilton, using technologically advanced light rail transit (ALRT) equipment within a dedicated right-of-way.

In 1985 the Government reviewed the use of the ALRT technology and decided to proceed instead with conventional rail technology on existing or expanded rail corridors.

The Province is now carrying out a study to assess the best means of providing improved GO rail service between Burlington and Hamilton.

1.2 Purpose of the Study

The purpose of the study is to recommend an alignment and an operating and implementation strategy for expanded GO Train service into the City of Hamilton that is satisfactory to the City of Hamilton, the Regional Municipalities of Hamilton-Wentworth and Halton, CN and CP Rail and the Province of Ontario.

The study is composed of an Overview Component followed by a Planning Component.

The purpose of the Overview is to determine whether it is necessary to carry out a detailed planning study and, if so, to address the following items:

1) To clearly define the issues that are to be addressed in the Planning component of the study and the level of effort that should be expended on the analysis of these issues.
2) To provide (i) an understanding of the range of alternatives that will need to be addressed during the course of the Planning component of the study and (ii) a preliminary commentary on the alternatives with respect to the issues identified, the order of magnitude of costs (both capital and operating) and the appropriateness of carrying the alternatives into the Planning component of the study.
3) To develop a specific approach to carrying out the Planning component of the study. If possible, this will focus on a limited range of alternatives with less feasible alternatives having been set aside as a result of a preliminary assessment during the Overview.

The development of a specific approach will also include (i) an identification of the options that will have to be considered in order to meet the requirements of the Environmental Assessment Act and (ii) an outline of the public involvement program that will be followed during the Planning component of the study.

This report summarizes the Overview Component of the Burlington to Hamilton Study portion of the GO Train Service Expansion Program.

1.3 Overview Study Approach

A number of key issues have been identified as fundamentally defining the study approach.

Demand

Longstanding local municipal desire by Hamilton for extension of GO Rail service to the City is in accordance with the Government of Ontario's intention to implement an inter-regional rapid transit strategy. The utilization of such a service if provided, however, must be taken into account in determining the appropriate strategy.

Possible Solutions

The Province's decision, in the fall of 1985, to utilize conventional rail technology for GO rail expansion, focussed attention on the possibility of providing the service along one of the existing rail corridors connecting Burlington and Hamilton. These are the CNR corridor (the present routing for the existing peak hour rail service to Hamilton) and the CPR/TH&B corridor. A preliminary identification of alternatives includes:

- Base case. This alternative will provide for an analysis of the effects associated with maintaining existing GO transit service along the CNR alignment into the future. This will be required as a bench mark from which the effects of any other alternative can be assessed
- Relocating the existing GO transit service from the CNR alignment to the CPR/TH&B alignment

- Additional (but limited) GO rail service along the CNR alignment
- Limited service along the CPR/TH&B alignment
- "Full" service (i.e. 20 minute service in peak periods and 1 hour service in off-peak periods) along the CNR alignment
- "Full" service along the CPR/TH&B alignment.

In addition it is necessary to address other alternatives because they either provide a "bridge" between earlier studies and the present study (e.g. light rail transit options such as GO-ALRT) or because it is possible that they could be considered as "alternatives to the undertaking" as required for consideration during an Environmental Assessment process (e.g. improved bus service).

Costs and Benefits

The recommendation and implementation of a particular solution will depend largely on the costs and benefits associated with it that make it preferred over all other alternatives. The introduction of a new rail service over a 13 km corridor through a built-up area may entail significant expenditures and a wide range of social and environmental impacts, while the economic and social benefits of such a service may be found to be even more extensive.

The analysis and evaluation of alternatives will reflect the costs and benefits associated with each, using the factors of economic benefits, cost, land use impact, operation, transportation network, flexibility, social impact, natural environmental impact, demand, and level of service.

Following from the awareness of the key issues listed above, the Overview study approach is fundamentally a low-key review and assessment of existing data, with public contact not initiated until completion of the Overview and its review with elected representatives of the affected municipalities.

The assembly and review of background information occurred with assistance from technical staff of local municipalities and involved agencies. The assessment of the information took place with an emphasis on addressing the issues identified previously in sections 1.2 and 1.3. The results are documented in this report, the content of which was presented to municipal committees of council and the general public in June 1987. The results of the review process are documented in the "Summary Report on First Round of Public Involvement - June 1987".

2 AVAILABLE INFORMATION

The existing information reviewed in the Overview is summarized in this section.

2.1 GO-ALRT

Between 1982 and 1985 the GO-ALRT Program was conducted to develop a rapid transit strategy between Oakville and Hamilton. Although the specific technology and recommended route for GO-ALRT are not part of the current Conventional Rail Study, a great deal of information was gathered and prepared for GO-ALRT that remains applicable.

The technical reports dealing with the social and natural environment of the GO-ALRT study area (which coincides with the current study area), the Environmental Status Reports prepared for the GO-ALRT projects, the information report on public issues and concerns, and some of the ridership projections are all available. Although some review and updating is necessary, little change in the study area is expected to be noted between the 1984-85 period of the GO-ALRT studies and the present.

2.2 User/Demand Information

Between GO Transit surveys of bus and rail passengers, M.T.C. Highway traffic counts, GO-ALRT demand forecasts, and ridership forecasts prepared for the current study, a comprehensive picture of current use and potential ridership of transit services in the Hamilton Lakeshore corridor may be developed. A summary of the demand information currently available is appended to this report.

Public transit commuter service between Hamilton and Toronto has been consolidated under the GO Transit system, with frequent express buses linking the City centres via the Queen Elizabeth Way, an intercity bus service travelling via Lakeshore Road, a full service train line between Oakville and Toronto, a bus link between central Hamilton and the Oakville GO Rail station, and three peak hour trains extending directly from Toronto via Oakville to Hamilton's CN station. As well, GO Transit is planning to extend full rail service to Burlington within five years.

From Hamilton to Toronto and vice versa, GO Transit has captured 80-90% of the total current market for transit trips, and little growth is expected in the market. Total daily two-way rail and bus ridership between Hamilton and Toronto is approximately 3,050 (1983 Surveys). Total ridership at the Union Station end of the link was 26,000 daily in 1983, reflecting the number of Burlington, Oakville and Port Credit commuters using the Lakeshore rail line.

Automobile use predominates between Hamilton and the Lakeshore communities, and, referring to the M.T.C. Transportation Demand Research Office's memo of 87 02 25, a.m. demand for commuter service from the east to Hamilton is forecast to be no more than 1000 passengers in the long term (assuming full GO Train service to the downtown Hamilton CP/TH&B Station). The 1991 a.m. ridership to Hamilton CP/TH&B Station is anticipated to be 300 for 3 train service and 700 for full service. The forecast figures are halved if the CN Station is used as the Hamilton terminus.

The introduction of full GO Rail service (consisting of 20 minute service in peak periods and hourly all-day service) to Hamilton is forecast to attract 3400-4800 daily two-way passengers from the Hamilton-Wentworth region in 1991 and 2001.

The possible ridership levels for various routes, levels of service, and other scenarios will be studied in greater detail in the Planning Component of the study, as the above figures are based on preliminary assessments only.

2.3 CN/CP Operations

In anticipation of the current study, GO Transit commissioned the two railway companies along whose rights-of-way GO Trains could run to undertake a preliminary assessment of the operational viability of using these corridors for GO rail service. The CN Rail and CP Rail reports were received in 1986 and summarize the requirements for the project as perceived by the railways.

The CN study corridor extended from the Burlington GO station (the extension of full GO Train service to Burlington is subject to a separate study, and full service is expected there by 1992) to the west limit of the Hamilton Yard, while the CP corridor studied was from Hamilton Junction to the CP/TH&B station on Hunter Street in downtown Hamilton. GO Transit currently operates 3 trains daily along the CN route, eastbound from Hamilton in the a.m. peak and returning in the p.m. peak.

The results of the CN operational analysis are:

- for limited additional uni-directional GO train service
  - one additional main line track would be required between Burlington and Hamilton.
- for counter-peak direction GO train movement
  - two additional main line tracks required between Burlington and Hamilton (assuming current schedules)
  - if GO train schedule and operational modifications can be developed, some counter-peak direction GO trains may be accommodated on a single additional main line track
- for full GO train service
  - two additional main line tracks required between Burlington and Hamilton.

It should be noted that the CN Hamilton Yard and Station area was not studied by CN, and thus no additional requirements were identified by CN although significant impacts are expected there.

The results of the CP Rail operational analysis are (in addition to the CN requirements noted above between Burlington and Hamilton Junction):

- for limited peak period unidirectional GO train service
  - delays to CP would be acceptable without incurring the cost of rebuilding the single-track Hunter Street tunnel. Some signal and track modifications would be required.

- for full GO train service
  - requirements would be one additional main line track between Hamilton Junction and Poulette Street, two additional tracks from Poulette Street to the west portal of the Hunter Street tunnel, at least one additional track through the tunnel (which would entail reconstruction of the 600 m long structure) and additional trackage at the Hunter Street station.

Preliminary cost estimates were included for the recommended work in the CN and CP reports, but major areas of cost uncertainty remain at the CN Hamilton Yard and the CP Hunter Street tunnel.

It should be noted that the rail reports were preliminary assessments of operational viability only, and further work on schedule and operational co-ordination as well as a more detailed examination of the physical and cost feasibility of the project may significantly affect the report recommendations.

2.4 Local Planning Documents

The study corridor passes through the City of Burlington, the Regional Municipality of Halton, the City of Hamilton, and the Regional Municipality of Hamilton-Wentworth, and the Planning, Transportation, and Development departments of each of those jurisdictions have supplied Official Plans, planning documents, and other information for use as background material for the study. Local responses to past studies such as GO-ALRT are also available.

The provision of improved commuter rail service between Hamilton and Toronto is noted in all local Official Plans as a desirable undertaking, and is a component of the June 1986 report, "Building on Strength - Realizing Opportunity (An Economic Strategy for Hamilton-Wentworth)". The possible social and environmental effects of such a project are addressed in the appropriate sections of the Official Plans, and use of an existing rail corridor for the service is preferred.

3. ALTERNATIVES

The alternatives available for improved Hamilton-Toronto commuter service are not limited to conventional GO Rail service. Accordingly, alternatives to the undertaking as well as alternative methods of carrying out the undertaking must be considered.

3.1 Alternatives to the Undertaking

3.1.1 Light Rail Transit

Due to the extent of work on the recent GO-ALRT study, the most prominent alternative to the undertaking is Light Rail Transit, whereby an ALRT or streetcar link would offer full service between central Hamilton and the Burlington GO Rail station, connecting with full GO Rail service between Burlington and Toronto.

3.1.2 Bus

A bus link between Central Hamilton and the Burlington full service GO Rail station could be developed on bus-only roadways, either using dedicated bus lanes on existing or widened roads or on a separate busway.

3.1.3 Roadways

Provision of additional roadway capacity between Hamilton and Burlington in the form of widened or new roadways, or an increase in vehicle occupancy rates may be considered as means of improving Hamilton-Toronto commuter service. Although these alternatives are assumed to be carried out independent of and parallel with transit improvements, they have been assessed as alternatives to the expansion of the GO train service.

3.1.4 Other

Non-conventional modes of commuter transit, including airplane shuttle service, rapid ferry or hydrofoil service, bicycles or walking may be considered as alternatives to the undertaking under the terms of the Environmental Assessment Act.

3.2 Conventional Rail Alternatives

3.2.1 Existing Service (Base Case)

The continuation of the existing serice, consisting of 3 daily peak direction peak period trains between the CN station in Hamilton and Toronto, along with GO train-meet and Q.E.W. Express bus services, is the base case with which the effects of any other alternative can be compared.

3.2.2 Level of Service

A wide variety of levels of service are possible, including increased peak period service with a greater number of and/or more frequent trains; reverse-flow service in the peak periods providing commuter service into Hamilton in the AM and out in the PM; all day two way service with hourly or two-hourly trains in the off-peak periods; and full service consisting currently of 20 minutes peak period service and hourly off-peak service in both directions from 6 AM to 1 AM. A further variation is to extend limited or full service to an interim station west of Burlington (ie. Waterdown or Kay Drage) with a lesser level of service beyond that point to Hamilton.

3.2.3 Route

The two existing rail corridors into Central Hamilton are the only route alternatives under consideration for extension of GO Rail service. The CN rail line from Burlington GO Station to Hamilton Junction at Cootes Paradise is common to both routes and is used by the existing GO Rail service. Within Hamilton, the CN route passes through the waterfront Hamilton Yard to the CN/VIA station on Murray Street at James Street, 1 km north of the commercial core. The CP line heads southwest from Hamilton Junction, paralleling Highway 403 to Main Street, where it turns to run in a deep narrow cut then through a 600 m long tunnel directly beneath Hunter Street to the CP/TH&B Station, located east of James Street on the south edge of the commercial core.

The two routes are linked by an at-grade track along Ferguson Avenue and a Belt line further to the east of the City Centre.

3.2.4 Stations

In addition to the respective CN and CP Hamilton Stations, on-line station locations have been identified to provide service to western Burlington, the west end of Hamilton and Highway 403 commuter traffic.

A station in the vicinity of Waterdown Road (also known as the Aldershot Station) was proposed in the GO-ALRT study and remains an option in the current study. It could serve Burlington West residents, auto-based commuters on Highway 403 and overflow demand from the Burlington Fairview Road station to the east.

A station on the CP line in the vicinity of Kay Drage Park adjacent to Highway 403 was proposed in the GO-ALRT study to act mainly as a Highway 403 auto-based commuter station.

Another alternative, either for a terminal or line station, has been identified at the Main Street/Dundurn Street area of the CP Line.

No other feasible conventional rail stations have been identified. The on-line stations would allow the staging of the extension of full service to Hamilton from Burlington, opening up a range of service options, should full service not be extended initially.

3.2.5 Storage Yards

Depending on the level of service and operating schedules for GO Rail extension to Hamilton, overnight, midday, or temporary storage yards may be required for GO Trains. Numerous rail yards owned by CN and CP exist in Hamilton, and yards exist on the CN main line at Aldershot and Fairview Street in Burlington.

The main CP Aberdeen Yard is located on the Waterford Subdivision southwest of Main Street junction in Hamilton, and the Victoria Avenue and Forest Avenue Yards are on the CP line east of the Hunter Street Station, where another small yard area exists. The Aberdeen and Victoria Avenue Yards have been identified by CP Rail as potential overnight storage locations for GO Trains.

The main CN Hamilton Yard is located on the waterfront west of the CN Station, while the Aldershot Yard extends between Waterdown Road and King Road on the main CN line in Burlington.

4. PRELIMINARY ASSESSMENT OF ALTERNATIVES

4.1 Factors Used in Preliminary Assessment of Alternatives

The identified alternatives were compared against one another using ten factors designed to measure the relative costs, benefits and effects of the schemes. The factors are:

1) Economic Benefits - the positive effect of the alternative on job creation, development demand and economic spinoffs, both in the corridor and the entire region.
2) Costs - the capital and operating cost of the alternative, along with any negative economic effects and associated transportation network requirements. The ability to stage costs is also a consideration.
3) Land Use Impact - the effect of the alternative on existing and potential land uses (both positive and negative) and its compatibility with Official Plans.
4) Operation - the logistics of the operation of the alternative in the context of shared or competing rights-of-way. The ability to control, detour and operate the alternative with minimal impact on or due to other facilities is included.
5) Transportation Network - the effectiveness of the alternative in balancing network demand and capacity, the ability to interface with other modes, and the role of the option within local and regional Transportation Plans.
6) Flexibility - the ability to expand, extend, supplement and stage implementation of the alternative to respond to demand and other constraints.

7) Social Impact - the effects of the alternative on the community and the people living or working near the service, including noise, vibration, and visual intrusion as well as community severance and positive social effects.
8) Natural Environmental Impact - the impact of the alternative on the natural environment in areas such as Cootes Paradise, the Royal Botanical Gardens, and the Hamilton Harbour.
9) Demand - the effectiveness of the alternative in creating user demand.
10) Level of Service - the features, fees, quality and quantity of service offered by the alternative to its users.

4.2 Preliminary Assessment of Alternatives

4.2.1 Alternatives to the Undertaking

The alternatives to the undertaking have been identified and described in Section 3. The Base Case (existing service), Light Rail Link, Bus Link, Roadway, and other Alternatives were assessed along with the Improved Conventional Rail (GO Rail) proposal in order to determine which alternatives were the less viable and which were worthy of being carried forward to the Planning component of the study.

The summary of the preliminary assessment is shown on Table 1 (Section 4.3), and a more detailed summary is appended to this report.

In terms of Economic Benefits, improved conventional rail service is the only alternative expected to have a significant positive economic impact on Hamilton-Wentworth, as it strengthens the Hamilton-Lakeshore-Toronto linkage and attracts workers, shoppers and residents to Hamilton, focussed on a central station. The LRT and Bus Options essentially replace the existing train meet bus service and are expected to result in limited economic benefits to the study area, although a downtown station could be a catalyst for downtown development. Increased roadway capacity would have a positive economic impact but would not focus development on central Hamilton. As the major roadway capacity problems in the Toronto-Hamilton corridor are outside the study area, little impact on commuter traffic conditions would be expected from roadway improvements within the study area. No significant Ecomomic Benefits would be expected on a regional basis from the provision of non-conventional commuter alternatives.

The Cost involved in the provision and operation of major new transportation facilities in a built-up area is significant, and although all the alternatives (with the exception of the Base Case) would likely have a capital cost in the same order of magnitude ($100 - $300 million) the ability to stage construction (and hence cost) in accordance with ridership or demand gives the Conventional Rail, Bus, and Roadway options a significant advantage over LRT. By definition, no cost is assigned to the Base Case, and non-conventional commuter modes could entail a wide range of costs.

Land Use Impact of each alternative corresponds in large part with the Economic Benefits assessment, with Improved Conventional Rail service resulting in the greatest positive effect on land use, particularly in the vicinity of a Hamilton station. The Base Case is also rated highly due to its integration with current and future land use plans. Construction for Light Rail or Bus Link could have significant

Land Use Impact, as new corridors are not generally available in the urban parts of the study area. Most significant changes or additions to the Roadway network would have both positive and negative impacts, and other modes would have a negligible affect on land use.

Current GO commuter rail Operations are severely constrained by factors beyond its control, constraints which Improved GO Rail Service on dedicated tracks would be designed to eliminate. Buses have great operational flexibility whereas the fixed rail LRT alternative is more limited in its operational features. Roadway operations in the study area are flexible but use is affected by peak hour problems elsewhere in the Lakeshore corridor.

The improvement of GO Rail service to Hamilton would be a final element in the strategy of providing a complementary range of transportation alternatives in the Toronto-Hamilton corridor and be very beneficial to the overall Transportation Network. The LRT and Bus links would only act as replacements for the existing train-meet bus service. Opportunities for a multi-modal transit terminal are present with all rail alternatives. Improved roadways would not necessarily improve the overall transportation network, and other alternatives would have a fringe impact on the network in the corridor.

The Base Case GO Rail service suffers from very limited Flexibility, both operationally due to freight rail traffic demand and physically due to constraints such as the Hunter Street Tunnel. Improved rail facilities improve flexibility but certain route and operational restrictions are inherent in the concept of rail systems. Buses, on the other hand, are the most flexible of all public transit services. Reliance on the Q.E.W. limits commuter auto flexibility between Hamilton and Toronto.

As pointed out in the GO-ALRT study, a Light Rail link on a new alignment has potentially significant Social Impacts, while Improved Coventional Rail facilities within existing rail rights-of-way would minimize the negative impact of a new service and result in greater social benefits (following from economic benefits) than other alternatives. Improved roadways can have significant negative social impact on adjacent areas, although traffic pattern shifts that result may benefit others. Non-conventional services generally have negligible negative social impact.

The Base Case implies the least change to the Natural Environment, followed by the Conventional Rail and Bus Lane alternatives that use existing transportation rights-of-way. Facilities on new alignments have the greatest potential for negative environmental impact, while most non-conventional systems have minimal impact on the natural environment.

A direct GO Train link to Hamilton is judged to be the most effective of the alternatives in creating Demand, while LRT and Improved Bus Service options offer little change from the current situation. The public perception of LRT being preferred to buses give it a higher rating. The Base Case satisfies but does little to create rider demand. Roadways are improved in response to demand but increased

auto-based demand in the Lakeshore corridor is not a desirable transportation strategy. No demand is apparent for other commuter modes in the corridor.

The Base Case Level of Service is high enough to capture 80-90% of the Hamilton-Toronto commuter traffic while the alternatives to it are all fundamentally based on improving the level of service in the corridor. The elimination of an intermodal passenger transfer at Burlington gives the Conventional Rail system a higher rating but Hamilton terminal location is a significant factor for all alternatives with LRT and Bus terminals being located in Hamilton's core while the CN rail station offers a different level of rail service than the central CP station. The roadway Level of Service will continue to be constrained by capacity limitations well beyond the study area, and other alternatives could entail a wide range in Levels of Service.

The comparative assessment of alternatives based on the above analysis is summarized in Sections 4.3 and 4.4.

4.2.2 Conventional Rail Alternatives

Eight Conventional Rail Alternatives have been identified in order to determine the most appropriate method of carrying out the undertaking, consisting basically of four different levels of service on each of the CP and CN rail routes.

The base case level of service is the existing 3 peak period peak direction weekday trains, while an increase in one-way peak period service to 6 daily trains is a second level. The third group of service alternatives would be two-way peak period service of 5-7 daily trains, and full service could be approached by adding two-hourly all day service to finally result in the standard Lakeshore line full service of 20 minute peak and 1 hour off peak frequency in both directions. In the long term, demand may be such system-wide that a further increase in frequency to 10 minute peak/30 minute off-peak service would be implemented in the Lakeshore corridor.

Full service will extend in any case from Toronto to Burlington and all levels of rail service below full service to Hamilton are assumed to be supplemented by train-meet buses between Burlington GO Station and Central Hamilton.

The status of the Citylink Express GO Bus service between Hamilton and Toronto via the Q.E.W. would be determined by GO Transit in the context of improved GO rail service in the corridor.

The ridership demand forecasts prepared to date have assumed the elimination of the express GO Bus with riders using trains instead. However the retention of the express bus as a supplementary service may be appropriate for certain rail levels of service.

The preliminary assessment of Conventional Rail alternatives is hampered by the uncertainties regarding cost and economic impact present at the Overview stage of the study. Although an analysis of the two route alternatives within Hamilton using the 10 factors described in Section 4.1 may indicate that the CP Route is as good as or better than the CN route in terms of all but cost factors, the potentially high cost of reconstructing the Hunter Street Tunnel is unknown at this point, as are the possibly equally significant costs and complications of CN's Hamilton Yard requirements. The introduction of Hamilton's proposed Perimeter Road to the CN corridor is another factor of unknown but potentially great significance. An unknown fourth factor is the relationship between the economic benefit to the community, ridership, and cost of providing the service.

Recommendations concerning the resolution of these questions are outlined in Section 5 of this report.

In terms of infrastructure requirements for the provision of expanded GO train service, an increase in the number of trains from 3 and/or the introduction of contra-flow (ie. into Hamilton in a.m. peak) service will require one new main track on the CN line from Burlington to Hamilton Junction, improvements to the CN Aldershot Yard facilities, and layover facilities for GO trains. A cost estimate of $5 million is included for the provision of a station at Waterdown Road in Burlington. In addition to these base requirements, the remaining route and level of service implications of the alternatives are summarized as follows:

CN Route, 3 Peak Direction Trains Daily

As the existing service, this acts as a base case for comparative purposes.

CP Route, 3 Peak Direction Trains Daily

A shift of the existing service to the CP route with use of the Hunter Street station would be possible with an expenditure of approximately $8 million for signal and track improvements on the CP line. Implementation of the alternative would be straightforward but, recognizing that an ultimate increase in level of service could, at some point, require reconstruction of the Hunter Street Tunnel, a commitment should not be made to the CP line without a full understanding of the long term implications of the use of the Tunnel. Insufficient information is available at the Overview stage of this study to recommend an approach to the Tunnel problem, and it is proposed that the Tunnel be studied in detail early in the Planning stage.

CN Route, 6 Peak Direction Trains Daily

CN Rail indicated that any increase in GO Train traffic would require the addition of one main line track between Burlington and Hamilton Station. A preliminary estimate of the associated cost is in the order of $55 million, assuming only minor changes are required within Hamilton Yard.

CP Route, 6 Peak Direction Trains Daily

The combination of an extra track east of Hamilton Junction to Burlington and improvements on the CP line within Hamilton entail an estimated preliminary cost of $58 million. The same caveats regarding the Hunter Street Tunnel as noted above are present for this alternative.

CN Route, 6 Two-Way Peak Period Trains Daily

The introduction of contra-flow service to allow commuting from Toronto and the Lakeshore by train to Hamilton has a significant cost impact. Although it may be possible with appropriate scheduling and operational control to use one track with twin track train meet sections, the CN preliminary report indicates that two new main line tracks would be required for any two-way alternative between Burlington and Hamilton Station. The associated cost is estimated to be in the order of $130 million, which includes an arbitrary assignment of $40 million for works required at the Hamilton Yard to allow two additional GO Rail tracks.

CP Route, 6 Two-Way Peak Period Trains Daily

The addition of at least one track between the Hamilton Junction and the Hunter Street Station will be required for this alternative, entailing the reconstruction of the Hunter Street Tunnel and potentially significant impacts on residential areas west of the tunnel. The cost of the Tunnel reconstruction is unknown, and may be greatly different from the $60 million estimated cost used in the previous GO-ALRT study. If $60 million is assigned to the Tunnel, a total preliminary cost estimate of this alternative is in the order of $180 million.

CN Route, Full Service

The same costs and conditions apply to full service (including two-way off-peak trains) as to 6 two-way peak period trains (see above).

4.3 Alternatives Found to be Less Feasible

Amongst the four basic alternatives assessed in the previous section under "Alternatives to the Undertaking", neither the Base Case nor a Light Rail Link were determined to effectively serve the commuter demand in the Hamilton-Toronto corridor. Of the remaining two alternatives, an improvement in conventional (GO) rail service to Hamilton is equal to or better than improved bus services in almost all

ANALYSIS OF ALTERNATIVES TO THE UNDERTAKING

FACTOR \ ALTERNATIVE	BASE CASE	CONVENTIONAL GO RAIL	LIGHT RAIL LINK	BUS LINK	ROADWAYS	OTHER
1. Economic Benefits	○	●	◑	◑	○	○
2. Cost	●	◑	○	◑	◑	○
3. Land Use Impact	●	●	◑	◑	◑	○
4. Operation	○	●	◑	●	◑	○
5. Transportation Network	○	●	◑	◑	○	○
6. Flexibility	○	◑	◑	●	○	○
7. Social Impact	◑	●	○	◑	◑	◑
8. Natural Environmental Impact	●	◑	○	◑	○	●
9. Demand	◑	●	◑	○	○	○
10. Level of Service	○	●	◑	◑	○	○
OVERALL RATINGS	○	●	▨ ○	▨ ◑	▨ ○	▨ ○

● ◑ ○ = Most Preferred → Least Preferred

▨ = Rejected Alternative

factors. The analysis confirms that Improved GO Rail service is the most preferred alternative means of improving commuter service to Hamilton, however, the operational flexibility of an improved bus service allow it to be considered as an important supplement to rail service. Although bus lanes need not be addressed in detail during the planning component of this study, the role of commuter bus services in the regional transportation network should be scrutinized along with rail service in the upcoming portion of the study.

4.4 Alternatives to be Carried Forward

Although a range of service and route alternatives are identified for the Conventional Rail option, full information and analysis is not available at this point of the study based on which any particular alternative could be either recommended or rejected. Even the initial shifting of 3 existing peak hour trains from the CN to the CP route has long term implications that should be understood before expenditure and implementation.

The Program for Planning Component of the Study outlined in the next section identifies the further analysis to be undertaken in order to resolve the outstanding issues and recommend an alternative.

5. PLANNING COMPONENT OF STUDY

5.1 Rationale for Planning Component of Study

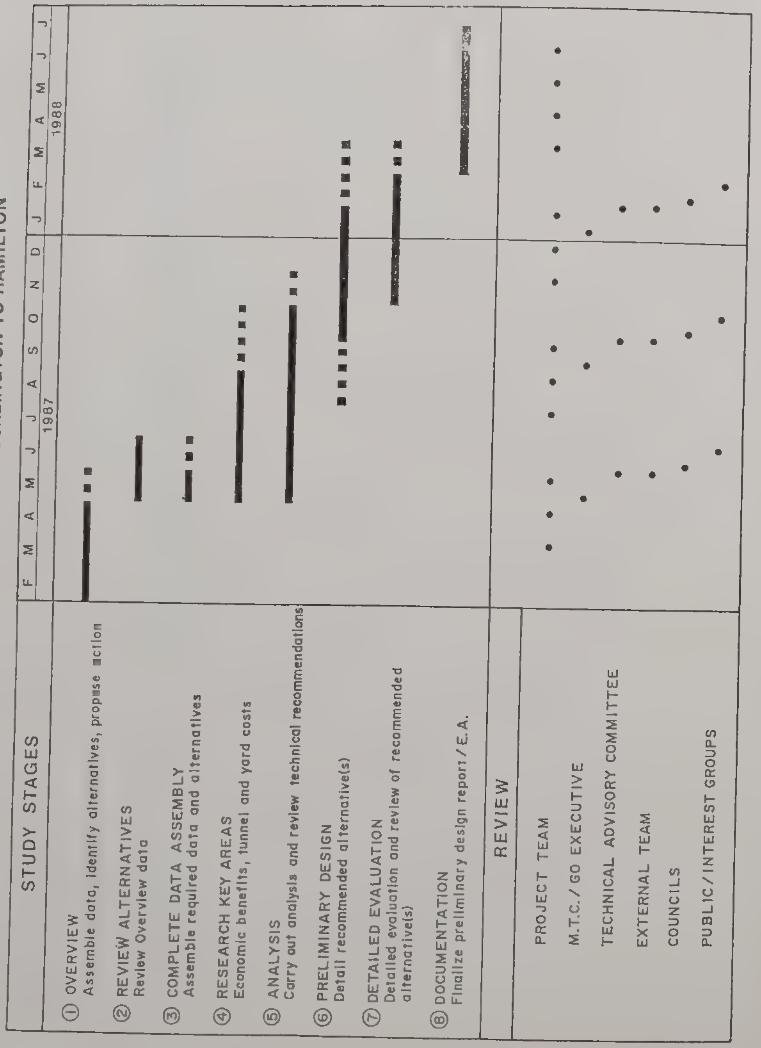
Before the introduction of improved GO Rail service to Hamilton, an in-depth planning study should be undertaken in order to determine a recommended service and associated works that would result in maximum economic benefits, minimum social and natural environmental impacts, maximum benefit/cost ratio, and practical feasibility, both initially and in the long term. Such a study is scheduled as the Planning Component of the current study, to follow the completion of the Overview Component.

It is evident from this Overview Report that sufficient information to allow the recommendations of a specific implementation program for extension of GO Rail to Hamilton does not exist and must be developed as part of the Planning Component. Once certain key issues have been analyzed within the context of the full public participation program, the recommendation of an implementation strategy can be made and, following the approvals process, incorporated into the programs of the sponsoring agencies.

5.2 Program for Planning Component of the Study

The Planning component of the study is oriented towards gaining an understanding of the outstanding key issues so that their resolution can lead as soon as possible to a recommended strategy for implementing improved GO Rail Service to Hamilton. An important part of the study is public awareness and involvement in the consideration of all alternatives, within the well-defined procedures of the Environmental Assessment process. An outline of the program for the Planning Component of the study is shown on Figure 2.

FIG. 2 GO TRAIN SERVICE EXPANSION PROGRAM – BURLINGTON TO HAMILTON



5.2.1 Key Issues

Three interrelated key issues require analysis during the early part of the Planning Study: the CP Hunter Street Tunnel; the CN Hamilton Yard; and the Regional Economic Impact of the improvement of GO Rail service to Hamilton. Both the costs and the physical feasibility of different levels of required work in the former two vicinities are largely unknown at present, while the extent of the latter and its sensitivity to alternative routes and levels of service will be a crucial element in both the choice of alternatives and the overall justification of the proposed undertaking.

5.2.2 Public and External Involvement

The requirements of the Environmental Assessment Act along with an understanding of the sensitivity of residents in the study area encourage a high level of public involvement and consultation with all potentially affected parties throughout the study process. Apart from ongoing interaction between the Project Team and Municipal representatives, the involvement of the public, residents and external agencies will be focussed on the three key decision making points of the study - at the ends of each of the Identification of Alternatives, Analysis of Alternatives and Recommendations stages.

Public information centres on an open-house basis will be held in Burlington and Hamilton at these three times, and every effort will be made through advertising and mail delivery to advise the public of their opportunity to contribute to the study through attendance at these centres or through correspondence with the Project Team. Key external agencies will be met with as required, and each will have the opportunity to comment on the study.

5.2.3 Level of Effort

The planning component of the Burlington to Hamilton Go Rail Extension Study will be carried out at a sufficient level of detail to allow a sound recommendation to be made and documented in both an Environmental Assessment Report (if required) and a Preliminary Design Report. These reports would provide the basis, following the approvals process, for a detailed design program and final construction/ implementation plans.

The comparison, analysis and evaluation of all identified alternatives will require the study of station concepts, routes, costs, environmental concerns, and overall transportation network operations. The preliminary design of a recommended and approved route will include a calculated alignment and profile, a drainage study, a property plan, staging plans, and cost estimates. All of these activities are in the context of public participation and governmental review and approval. The appended Terms of Reference outline the major requirements of the planning study.

5.2.4 Preparation of Environmental Assessment Report

The Burlington to Hamilton Study of the GO Train Service Expansion Program falls under the Group A category of the Environmental Assessment Act of Ontario. The Act lists "New Extension or Modifications to Track for Commuter Rail line" or "Major New or Extended Commuter Rail Route" as requiring the submission of an Environmental Assessment Report to the Ministry of the Environment, subject to hearings, for acceptance of the assessment and approval of the undertaking. The identification of, and effects on, environmentally significant issues and areas will be a major component of the report.

It should be noted that the entire study area is subject to the Environmental Assessment Act requirements, and that the exemption from the full requirements granted the GO-ALRT Program in 1983 for the corridor between Highway 6 and Walkers Line, from 500 metres north of the Q.E.W. to 500 metres south of the CN line, does not apply to the current study.

6. SUMMARY

The Overview component of the Burlington to Hamilton GO Rail Extension Study has identified the key issues present, developed the range of alternatives to be addressed, and outlined the work to be done in the Planning component of the study.

Three basic issues define the approach to the study: the local and provincial desire for improved GO Rail service to Hamilton; the costs and benefits of alternative solutions; and the determination of the best solution from the range of alternatives.

It has been determined that improved conventional GO Rail service is an appropriate means of providing better service to commuters in the Lakeshore corridor between Hamilton and Toronto, and the Planning Study is designed to identify the best solution amongst all conventional rail alternatives.

The use of existing rail corridors for provision of additional GO train service is the fundamental solution, but the presence of two distinct routes, numerous station alternatives, a wide range of service levels, environmentally sensitive areas, and zones with potentially high cost and technically difficult physical problems means that the specific approach to providing improved GO Rail service to Hamilton must consider a broad selection of interrelated factors. In particular, the costs and benefits associated with each alternative must be identified in order to confirm the viability of the undertaking. Insufficient information was available at the Overview stage of the study to resolve these issues and it will be the objective of the Planning component to recommend a solution.

The entire study is part of the Environmental Assessment process, with attention paid to its requirements for full public participation, multi-level review, and approvals procedures. The results of the Overview Study and the concurrent initiation of the Planning component will be reviewed at public information centres, with affected external agencies, and by appropriate municipal council committees in June, 1987.

APPENDIX 'A'

DEMAND SUMMARY

EXTENSION OF GO RAIL SERVICE TO HAMILTON

SUMMARY OF DEMAND INFORMATION

1. GO TRANSIT SURVEYS

GO Transit conducts regular surveys of their users, facilities and services. These include station parking surveys, major biennial ridership surveys and monthly cordon counts, from which a realistic picture of current use can be assembled.

1.1 PARKING ANALYSIS

Station	Lot Capacity	Average Count (1987)	%
Hamilton	136	96	71
Burlington	724	608	84
Oakville West	208	122	59
Oakville	1,611	1,739	108
Clarkson	1,394	1,397	100

The distribution of these cars' origins is available through licence plate checks.

1.2 CORPORATE RIDERSHIP STATISTICS

GO Service	1979 Ridership (Annual)	1986 Ridership	Avg. Annual Change
Lakeshore Rail	9,990,028	12,098,060	+ 2.8%
Hamilton-Oakville Train Meet Bus	589,683	685,380	+ 2.2%
Hamilton-Toronto QEW Express Bus	770,375	962,600	+ 3.1%
Hamilton-Toronto Lakeshore Local Bus	840,456	600,300	- 4.7%

1.3 TRAIN SURVEYS

The most recent published GO Train passenger survey is from 1983, although service changes and some updates have occurred since then. The 1985 survey is unavailable. Riders were counted and surveyed concerning trip purpose, access mode, and origins/destinations. The 1983 survey took place in the afternoon and counted outbound (westbound) passengers only, and is broken down on a per-train basis as well.

Virtually all the traffic was homebound and had an origin at Union Station.

WESTBOUND PM GO RAIL RIDERSHIP

	Nov. 1983 Survey	Nov. 1986 Cordon Counts
Union to Long Branch	707 pass.	854
Union to Mimico	226	250
Union to Port Credit	2288	2580
Union to Clarkson	3366	3281
Union to Oakville	4185 (limit of full service)	4543 (limit of full service)
Union to Oakville West	193 (2 trains only)	207 (3 trains only)
Union to Burlington	730 (2 trains)	910 (3 trains)
Union to Hamilton	132 (2 trains)	156 (3 trains)
	11,827	12,771

In 1983, other origins and destinations along the line totalled 542, none of which had destinations past Oakville (mainly West Toronto commuters returning to Oakville). For comparative purposes, the Nov. 1986 Cordon Count results are noted above, showing moderate growth over the 3 years 1983-86 of 2.5% per annum. The 50% increase in train capacity west of Oakville in Oct. 1986 has not yet translated into a 50% increase in ridership.

Of those 11,808 riders boarding the westbound Lakeshore train at Union Station in the PM, 10,144 or 85% had origins at work and 95% had home destinations, illustrating the predominance of the work-based commuter use of this service.

At the Union Station end, 61% walked and 34% took the subway to the station, while at the egress stations, only 5-7% walked from the station to the final destination (considering Oakville, Oakville West, Burlington and Hamilton Stations).

1983 TRAIN ACCESS/EGRESS MODE SURVEY

Station	No.	walk	subway	local bus	auto	
		%	%	%	% drive/ passenger	% pick-up/ drop-off
Union Station	11808	61	34	3	1	1
Oakville	4668	5	-	47	38	8
Oakville West	193	4	-	5	54	35
Burlington	730	6	-	35	41	18
Hamilton	132	7	-	9	67	17

1.4 BUS SURVEYS

As with the GO Train surveys, Go bus riders are surveyed comprehensively every two years to determine trip origin, destination, purpose and time. The most recent published survey is that of April 1985 of outbound (westbound) PM bus passengers. The 44% questionnaire response was factored using simultaneous counts to develop overall rider statistics.

Three GO Bus services exist in the Hamilton-Toronto corridor: the Hamilton-Toronto express bus via the Q.E.W.; the Hamilton-Toronto local service along Lakeshore Road; and the Hamilton-Oakville train meet bus, scheduled in co-ordination with the Oakville-Toronto GO rail service. The fact that these services are commuter-based is borne out by the high percentages of users who take the same trip in reverse each day - 80% of the express passengers, 72% of the Lakeshore riders, and 75% of those using the train meet bus - virtually all of whom use the same mode on the reverse trip.

The attractiveness of the service can be inferred from the following: 59% of the express passengers, 38% of those using the Lakeshore route, and 52% of the train meet riders had a car available for the trip. The local character of the Lakeshore route compared to the commuter-based ridership on the express services is illustrated by the fact that approximately twice as many people (37-40%) used monthly passes on the latter as the former.

1985 BUS TRIP PURPOSE AND ACCESS MODE

GO Bus	Origin						Destination					
	Mode			Purpose			Mode			Purpose		
	Auto	Transit	Walk	Work	Home	Educ.	Auto	Transit	Walk	Work	Home	Educ.
Train Meet	7%	85%	8%	46%	7%	25%	32%	31%	35%	4%	83%	4%
Express	3%	36%	59%	61%	8%	8%	29%	31%	39%	3%	85%	1%
Lakeshore	5%	17%	75%	55%	12%	15%	3%	13%	82%	5%	79%	2%

Total ridership westbound in the PM in 1985 was 979 on the Toronto-Hamilton express bus, 822 using the Oakville Train meet service, and 624 on the Lakeshore bus.

No total daily (2-way) statistics can be developed from the Bus survey data, other than assuming contra-flow figures are negligible and eastbound AM figures are equivalent to westbound PM totals.

1.5 CORDON COUNTS

While Bus and Train surveys produce details on the characteristics of GO passengers, total volume figures for each service are more readily available from GO's semi-annual cordon counts, the most recent of which was conducted in November, 1986.

NOV. 26, 1986 GO RAIL CORDON COUNTS LAKESHORE LINE

STATION	AM				PM			
	EB		WB		EB		WB	
	ON	OFF	ON	OFF	ON	OFF	ON	OFF
Hamilton Train	180	-	-	-	-	-	-	156
Ham./Burl. Train Meet	164	to train	from train	29	122	to train	from train	481
Burlington	1137	0	-	-	-	-	0	910
Oakville West	229	0	-	-	-	-	0	207
Oakville	3944	2	-	476	674	-	0	4067
Clarkson	3164	86	104	65	237	107	68	3216
Port Credit	2508	71	153	43	230	142	116	2537
Long Branch	754	72	35	28	64	51	92	826
Mimico	221	43	54	13	22	56	58	227
* Union	178	12027	308	7932	9296	993	12293	1165
E. of Union	216	394	8194	262	405	9701	1300	135

* Union Station figures developed under the assumption that all trips through Union Station begin or terminate there.

On Lakeshore West line, full service extends between Union Station and Oakville. Three peak period peak direction trains link Hamilton and Oakville, supplemented by Train Meet, Express, and Lakeshore buses.

It can be seen that, on the Lakeshore West line, inbound AM ridership is virtually the same as outbound PM ridership, with a negligible contraflow demand.

In addition to the above on/off station counts, link volumes and capacity utilization figures are included in the cordon count summaries.

2. DEMAND FORECASTS

A number of demand forecasts have been made, mainly in conjunction with the current study, for demand and ridership for various possible means of extending GO Rail service to Hamilton. The main source of demand forecasts is the Transportation Demand Research Office of the Ministry of Transportation and Communications.

The forecasts use the 1981 census home-work trip information, current land use patterns, and a set of assumptions regarding fare integration, parking availability, feeder services, competing transit services, and rail schedule and frequency. No interference from freight trains in joint use corridors is assumed.

The following forecast summary was issued on 19.4.87 for projected eastbound ridership on GO Rail between Waterdown Road and Burlington (ie. Hamilton Region demand - 60% of riders from Hamilton-Wentworth get on at Hamilton CN Station and 40% drive to proposed Waterdown Station before using the GO Trains) for various scheduling options and full rail service between Burlington and Toronto:

PROJECTED EASTBOUND GO RAIL RIDERSHIP FROM HAMILTON-WENTWORTH

TRAINS	EXPRESS BUS HAM-TOR	1985 ACTUAL	FORECAST PASSENGERS			
			1985	1991	2001	2011
3	Yes	180	180-200	180-200	180-200	180-200
3	No	-	500-600	600-800	600-800	600-900
7 Regular	Yes	-	1100-1600	1200-1700	1200-1700	1300-1800
7 Express	Yes	-	1400-2000	1500-2100	1500-2100	1600-2200
7 Regular	No	-	1500-2200	1600-2300	1600-2300	1700-2400
7 Express	No	-	1600-2300	1700-2400	1700-2400	1800-2500
Full Service	No	-	1600-2300	1700-2400	1700-2400	1800-2600

The 1983 GO Transit daily ridership in the Hamilton-Burlington corridor totalled 350 rail, 400 train meet bus, 2,300 Express bus, and 1,000 Lakeshore bus passengers, for a two-way daily total of 4,050 passengers. One-way demand can be assumed to be half that and unchanged in 1985: 175 rail, 200 train meet bus, 1,150 Express bus, and 500 Lakeshore bus passengers.

The simulation noted above shows less than 400 of the 1,150 Hamilton-Toronto Express bus passengers switching to Hamilton-Toronto GO Trains if the bus was cancelled with no improvement in rail service from 3 per day. 15% of the bus users are assumed to switch to car or carpools, with the remainder using the train meet bus service. As the peak period is extended and better served with 7 regular trains, Hamilton-Toronto GO Trains would capture 900-1,400 new riders from other modes, 450-650 of which would come from the express bus and 450-750 from autos. If the express bus was cancelled, 90% of the remaining 500-700 express bus riders would use the rail service rather than switch to automobiles.

Due to GO fleet utilization and scheduling/demand balance, it is considered unreasonable to assume express (non-stop) train service between Burlington and Toronto. At least one stop, in Oakville, would be made by each train.

The introduction of full service in the above simulation would not attract significant new ridership, with an increase of only 100 eastbound daily passengers. Given that the service would quadruple the number of trains available and that more than 160 riders currently use the train meet bus in the off peak periods, a more significant increase would be expected.

In a separate note from the Transportation Demand Research Office to the Toronto Area Coordinating Office on 25.2.87, contra-flow (westbound) AM demand in 1991 for full rail service is forecast to be 350-700 passengers, depending on the Hamilton station locations. A three train contra-flow service would carry 150-300 riders. Full service to a downtown Hamilton Station (TH&B Station) would approach 1,000 in the long term (2011).

The note also states that GO Bus and GO Rail together have captured 80-90% of the total current market for Hamilton-Toronto transit trips and only a 10-15% growth in the market is predicted to maturity. The current rail/bus split is 15%/85%, as the Hamilton-Toronto bus provides faster, more frequent, and more convenient service to most users than the train.

3. HIGHWAY TRAFFIC

M.T.C. Annual traffic reports indicate fairly constant growth in traffic on Highway 403 in the study area. The decade 1975-84 saw an increase of 36% in AADT from 41,850 to 57,000 just east of Highway 6. 1985 AADT jumped to 67,700, possibly due to construction work on the QEW/Burlington Bay Skyway. Growth since 1979 (including a drop due to the 1982 recession) has slowed to 1.5% annually, discounting the high figure of 1985. No forecasts are available.

4. GO-ALRT FORECASTS

Demand forecasts for GO-ALRT full service to Hamilton from Oakville with links to the GO Train service east of Oakville were carried out, mainly by the MTC Transportation Demand Forecasting Office, in 1984-85 based on 1981 census data for home/work trip distributions. GO-ALRT ridership forecasts are now generally held to be excessively optimistic.

4.1 403/KAY DRAGE STATION

This station was analyzed for one-way AM peak condition ridership, both as a terminal and as a line station in 1991 (see GO-ALRT Oakville to Hamilton Section Status Report, p.3.3.).

4.1.1 Terminal Station

EB	490 transit + 925 kiss & ride + 1,207 park & ride = 2,623 (+121 walk)
WB	1,118 arrivals by GO-ALRT (+38 walk)

4.1.2 Line Station

EB	8 transit + 400 kiss & ride + 1,169 park & ride = 1,577 (+121 walk)
WB	0 (+38 walk)

4.2 CENTRAL TERMINUS

On p. 42, Part B of the above report, 1991 projections were for 2,390 riders accessing GO Trains at a contra/terminal from Local Hamilton buses, which is 4.4% of the total HSR volume on the local bus routes.

4.3 DIVERSE ORIGINS

40% of eastbound boardings between Oakville-Hamilton will come from Hamilton. 90% of westbound trips beginning between Oakville and Hamilton are destined to Hamilton-Wentworth.

4.4 MAXIMUM LOADING

Page 2.2 of the GO-ALRT Environmental Status Statement (Walker's Line to 1.2 km East of Highway 6), report 1.6 noted basic performance criteria for GO-ALRT which included a maximum forecast loading in the peak direction and peak hour between Hamilton and Oakville of 16,500 passengers. Presumably this would be just west of the Oakville ALRT terminus.

4.5 STATION PARKING STRATEGY REPORT

This study determined "opening day" 1991 parking requirements for each station from ridership projects. It was assumed that the initial terminus would be Waterdown Road, with no Hamilton CBD station until later. The ridership figures used were:

Station	EB demand	WB demand
Burlington	1,266	1,480
Appleby Line	1,764	318
Oakville West	1,350	192
4th Line	519	34
Oakville	3,215	205

It was not stated whether these figures were for peak hour, peak period, or daily. The following demand table was also included in the report:

1983 AND 1991 LINK RIDERSHIP IN LAKESHORE WEST CORRIDOR

	1983 Ridership						1991 Ridership
	GO Rail	Train Meet	City Link	Lake-shore	HSR CCL	Total	Total (With GO-ALRT)
Hamilton Centre							10190 (1645)
Hamilton West	350 (200)	400 (40)		1000 (100)	700 (75)	4750 (615)	11464 (1998)
Waterdown							11400 (2159)
Burlington							11916 (2817)
Appleby	2200 (1300)					5300 (1570)	12928 (3452)
Oakville West		800 (70)	2300 (200)				13788 (3819)
4th Line	2750 (1600)					5850 (1870)	13254 (3714)
Oakville	11700 (4100)					14000 (4300)	20512 (5981)
Clarkson	17900 (6500)					20200 (6700)	31222 (9193)
Pt. Credit	22200 (8000)					24500 (8200)	38084 (11222)
Long Branch	23450 (8400)					25750 (8600)	40030 (11797)
Mimico	23700 (8550)					26000 (8760)	40620 (11974)
Union Sta. Bay St.							

350: 24 Hour Two-Way Link Volumes (at end of Link)
(200): A.M. Peak Eastbound Volumes (at end of Link)

APPENDIX 'B'

PUBLIC PARTICIPATION BACKGROUND STUDY

BURLINGTON TO HAMILTON
GO RAIL EXTENSION STUDY
PUBLIC PARTICIPATION PROGRAM - BACKGROUND

During the past decade the Hamilton area has been involved in a number of major road and transit planning studies, each with their own public participation program. As a result these programs were reviewed prior to developing the program for the present study. The past studies include:

- Roadways

  Red Hill Creek Environmental Assessment, December 1982

  QEW Environmental Assessment, May 1982

- Transit

  Rapid Transit Project - Draft Environmental Assessment, October 1981.

  GO ALRT Oakville to Hamilton Section - Status Report, October 1984.

As well a major roadway study is currently underway, namely, the Perimeter Road Feasibility Study.

The following provides a brief overview of the major activities of each program, a list of the groups that were involved and some general comments.

ROADWAYS

1) Mountain East-West and North-South Corridor Study - Summary Report, July 1979, Regional Municipality of Hamilton-Wentworth.
and
Mountain East-West and North-South Transportation Corridor - Environmental Assessment Submission, December 1982, Regional Municipality of Hamilton-Wentworth.

Activities

- held 3 series of public information centres
- First series (To introduce the study)
  - placed advertisements
  - distributed public brochures to 200 groups and individuals
  - held two open houses - limited response
- Second series (Phase 3: Detailed Evaluation of Viable Alternatives)
  - developed a comprehensive public information program
  - presentation to elected representatives of Regional and local councils
  - preview meeting with executive of identified local ratepayer groups
  - media presentation
  - newspaper advertisements of open houses including a questionnaire
  - distributed information package to 2000 people/groups on mailing list
  - five public information centres were held

  - half-hour television program
  - special meeting of Regional Council where briefs were presented
  - much greater response as the public had specific alternatives to consider
  - 1800 questionnaires were distributed of which 400 were returned and 753 were returned from the newspaper advertisement
- Third Series (Phase 4: Details of Preferred Option)
  - four public information centres were held (354 in attendance)
  - distributed brochures with questionnaires to 200 groups and all people in attendance at the open houses (120 questionnaires were completed)
  - written comments were also submitted

Groups Involved

- not identified

Comments

- similar to traditional M.T.C. approach although emphasis on the use of questionnaires
- greater public response during second and third series when there were specific alternatives for consideration

2) Queen Elizabeth Way, Burlington to Hamilton (Stage 2 and Stage 3) Environmental Assessment Report, May 1982

Activities

- two previous studies provided the base for this study (1972/74 and 1978/79)
- during the 1972/74 study, formal public meetings were held on five occasions; the meetings were advertised in the newspaper and approximately 4,500 brochures were mailed to residents; in addition seven informal information centres were held

- during the 1978/79 study, three public information centres were held at the conclusion of the study (approximately 400 people attended)
- during the 1981 re-submission of the previous 1978/79 study, two information centres were held (approximately 265 people attended)

Groups Involved

- not identified

Comments

- public participation program was more extensive during the initial planning stages

TRANSIT

1) Rapid Transit Project - Draft Environmental Assessment, October 1981 Metro Canada Limited

Activities

- at the outset, a number of 'teams' were organized including a public participation team (which had a separate subconsultant)
- many activities were undertaken as part of the process including open houses, presentations to social, business and community groups, interested institutions and schools, public notification using newspaper advertisements, radio announcements and flyers distributed to residents and businesses in the study corridor and adjacent areas, schools and libraries

A) - information centres were held at key points in the study
   - First Phase - October 1980 (Introduction)
     - public open house (115 total attendance)
     - advertisements including a clip-out response questionnaire
     - brochure available at open house

   - Second Phase - January 1981 (Alternative Alignments)
     - three open houses (498 total attendance)
     - use of questionnaires (asked to comment on evaluative factors)
   - Third Phase - March 1981 (Public preferences for alignments W, X, Y and Z)
     - three open houses (790 total attendance)
   - Fourth Phase - May 1981 (Interim information for four routes)
     - four open houses (989 total attendance)
   - Fifth Phase - June 1981 (Final information for four routes)
     - three open houses (499 in attendance)
   - in addition there were ongoing presentations, media coverage and the project office was open daily to the public

B) - Upon the selection of the preferred route, the detailed analysis included a comprehensive social impact assessment which entailed the study of the primary impact area (PIA) and secondary impact area (SIA)
     - for the PIA - in home personal interviews with 67 households
     - for the SIA - 30 minute telephone interviews with 100 households
     - also 20 minute telephone interviews with people throughout the Region

   (note - fact sheets were mailed out prior to telephoning)

C) - at the outset of the study a Community Advisory Committee on Rapid Transit (C.A.R.C.T.) was set up whose mandate was "to inform Metro Canada Limited of the community concerns and desires with respect to the Rapid Transit study"

- membership included:

  Social Planning and Research Council of Hamilton and District
  Hamilton and District Chamber of Commerce
  Durand Neighbourhood Association Inc.
  Upper Wellington and South Bend and Mohawk
  Upper James Street - Fennell Avenue to South Bend Road
  LACAC
  The Consumer's Association of Canada - Hamilton and District
  Ontario Society of Occupational Therapists
  Talus Group
  Bruce Trail Association
  Hamilton Automobile Club
  Mountain Plaza Mall Merchant's Association
  Downtown Business Association
  Clear Hamilton of Pollution (CHOP)
  Berrisfield Park Community Council
  Hamilton Society of Architects
  Wellington and Mary Business Association

Groups Involved

- see previous section

Comments

- there were many problems associated with C.A.R.C.T., ie. misunderstanding of their role and purpose, goals which differed from those of the project team, large range of opinions within the group itself which never allowed it to reach a consensus etc.
- as well, midway through the study the public participation consultant resigned due to apparent misunderstandings
- another consultant was retained to review the total process and whose report is documented in the main report

- therefore, it would appear that although there was a large amount of public input, due to the high profile of the study, the public participation program that was created was so extensive that it grew beyond control of the study team and as a result it was hindered by the emphasis on the wrong issues (eg. procedures) and misunderstandings regarding the responsibility for decision-making, the availability and comprehensiveness of study data etc.

2) GO-ALRT Oakville to Hamilton Section Status Report, October 1985, Ministry of Transportation and Communications (including GO-ALRT - Hamilton Project Social Environment Technical Report, S10.0 External Involvement August 1985)

Activities

- "Although the framework for involving each group was formulated as part of the study design, the Project Team remained flexible so that it could be responsive to events or issues as they occurred."
- use of workshops, public information centres, formal and informal group discussions, information packages, drop-in centres, brochures and a local telephone extension to the GO-ALRT Program Office
- see attachment #1 for a list of major activities
- First Stage (Introduction)
  - advertisements in local newspapers
  - those individuals or groups who wished to interact with the Study Team on a regular basis were invited to a meeting
  - active community interest groups and business associations identified (by the City of Hamilton) and notified by letter and follow-up phone call of an introductory meeting

- Second Stage (Alternative routes)
    - information centre preview - of 20 media organizations invited, 2 attended
    - public information centres held on June 23 and 28, 1983 (162 total attendance); comment sheets were distributed
    - notification by brochures distributed by postal walks to each business and residence within the study area, newspaper advertisements, brochures mailed to all interest groups and placed in the CN Station, GO Transit terminal, the library and each municipal and regional office
    - July 6, 1983 - formal follow-up meeting with identified interest groups
- Third Stage (Final evaluation and route selection)
    - notification as in June 1983 except that brochures were distributed by private firm
    - letter and brochure sent to 360 non-resident property owners
    - information centre preview for interest group representatives at which time an information package was distributed and groups were required to submit comments regarding the evaluation stage
    - December 14 and 15, 1983 information centres (158 total attendance)
    - numerous individual meetings
    - towards the completion of the evaluation stage, copies of the "Recommendation Report for Route Selection" and the "Hamilton Project, Technical Summary Report, Evaluation Stage" were distributed to each of the interest group representatives and the area libraries
    - March 22, 1984 - public drop-in centre (107 total attendance)
    - March 24, 1984 - public forum arranged by Hamilton Social Planning and Research Council

    - technical report and supplementary report made available to the general public through the local libraries

Groups Involved

- see attachment #2
- position papers received from those listed in attachment #3

Comments

- emphasis on public information centres, meetings with an organized group of representatives as requested during the course of the study
- public participation program under the direction of the Project Team

Perimeter Road Feasibility Study, 1987

Regional Municipality of Hamilton-Wentworth

Activities

- public information centres to be held at key points in the study
- information centres will be preceeded by a preview presentation to representatives of the ratepayers group
- Phase I (Transportation Planning Investigation)
    - December 1986 - meeting with ratepayers groups
    - April 1987 (alternatives) - meeting with ratepayers groups
      - public information centre
    - June 1987 (recommendation) - meeting with ratepayers groups
      - public information centre
- Phase II (Functional Design Investigation)
    - November 1987 - meeting with ratepayers groups
      - public information centre
- at first information centre, distributed a handout, "Public Involvement Program" which provided an update of the previous 1978 study, discussion of objectives, traffic analysis, alternatives and issues and the preliminary evaluation

ATTACHMENTS TO APPENDIX 'B'

- Community Interest Groups
- General Public
- Private Sector

Every effort has been made to identify, contact and work with the community interest groups. This has been done within the regular study framework outlined below, and through several additional specific meetings.

Study Introduction

May 5, 1983	Newspaper announcement to inform public of project and upcoming Information Centre.
May 12, 1983	Interest Group Meeting at Hamilton Public Library, (study introduction). - 19 attendees (14 groups)

Route Alternatives Stage

June 14 & 15, 1983	Newpaper announcements to inform public of upcoming Information Centre.
June 14, 1983	Brochures announcing upcoming Public Information Centre distributed by postal walks.
June 21, 1983	Presentation to media, held at Hamilton Place.
June 23 & 28, 1983	Public Information Centre held at Hamilton Place and Royal Connaught Hotel - 162 Visitors
July 5, 1983	Salvation Army, to discuss implications of alternatives on their facilities on York Blvd.
July 6, 1983	Interest Group Meeting at Hamilton Place, Alternatives Stage. - 26 Attendees (18 Groups)

Attachment #1

July 26, 1984	Board of Management, Downtown Hamilton Business Improvement Area, at Royal Connaught Hotel, discussion of alternatives.
Aug. 24, 1984	Eatons, discussions of alternatives.
Sept. 8, 1983	Hamilton and District Chamber of Commerce, to discuss implications of route alternatives.
Sept. 12, 1983	Beth Jacob Cemetery, to discuss implications on Cemetery.
Sept. 12, 1983	Downtown Hamilton BIA, with representatives, to receive their appraisal report respecting route alternatives.
Oct. 13, 1983	James St. Terrace Business Association, with a representative, to discuss implications of route alternatives.
Oct. 13, 1983	Royal Connaught Hotel, to discuss route and station alternatives.
Oct. 25, 1983	Hamilton Engineering Week, to public attendees, at open house, as part of other transportation projects displayed.
Nov. 9, 1983	LACAC and other heritage groups, at Hamilton Place, to review identified heritage features, and receive comments concerning the alternatives.

Evaluation Stage

Dec. 7 & 14, 1983	Newspaper announcement to inform public of Information Centre.
December 7, 1983	Brochures announcing upcoming Public Information Centre distributed by a private Hamilton distribution company. Direct mail announcement to non-resident property owners along the route alternatives.

December 13, 1983	Interest Group Meeting at Holiday Inn, Evaluation Stage, received copy of report entitled, "GO-ALRT, Hamilton Project, Information Package - Evaluation Stage". - 28 Attendees (19 Groups)
Dec. 14 & 15, 1983	Public Information Centre held at Holiday Inn - 158 Visitors
Jan. 4, 1984	Coalition on Sensible Transit, COST, meeting to review evaluation results, received copy of report entitled "GO-ALRT Hamilton Project, Information Package - Evaluation Stage".
Jan. 10, 1984	Hamilton Chamber of Commerce, to review the evaluation results
Jan. 24, 1984	Philpott Memorial Church, Deacon's Board, to review impacts on Church, and discuss evaluation results
Jan. 27, 1984	Livingston Furs, to review the evaluation results.
Mar. 1, 1984	Copies of "Technical Summary Report, Evaluation Stage" and "Recommendation for Route Selection" submitted to Interest Groups with invitation to attend upcoming Public Drop-In Centre held March 22, 1984.
Mar. 1, 1984	Copies of "Technical Summary Report, Evaluation Stage" and "Recommendation for Route Selection submitted to libraries for public review (Hamilton Public Library, Wentworth Library, McMaster University, Dundas Public Library and the Legislative Library).
March 1, 1984	Newspaper announcement to inform public of Drop-In Centre.

Mar. 22, 1984	Public Drop-In Centre at Royal Connaught Hotel. - 107 visitors
March 24, 1984	GO-ALRT Public Forum conducted by Social Planning and Research Council at Hamilton Public Library, acted as panelists to sumarize GO-ALRT route and answer questions, as well as receive presentations by community groups and citizens.
March 29, 1984	Regional Council/Hamilton City Council To receive Public Briefs respecting the selection of the recommendation.
May 9, 1984	Copies of "Information Report Related to Public Issues and Concerns" submitted to libraries for public review, (Hamilton Public Library, Wentworth Library, McMaster university, Dundas Public Library and the Legislative Library.)
June 7, 1984	Hamilton Board of Education To present recommended route and review impacts on Sir John A. MacDonald High School.

Pre-Design Stage

March 25, 1985	Westdale Community Association Informal general presentation of GO-ALRT System with opportunity for questions to be answered.

A composite of the special presentations and interaction between the Project Team and representatives of the Interest Groups and General Public has been included in the project's central files. Inclusive in the file are minutes of meetings, notes to file and summaries of the Information Centres including statistics on attendance and public comments. Also included is a summary of the Public Briefs submitted to Regional Council in March, 1984.

ATTACHMENT #2

TABLE 3-1

GO-ALRT HAMILTON

SUMMARY OF EXTERNAL CONTACTS [1]

GROUP		TECHNICAL ADVISORY COMMITTEE MEETINGS	WORKING MEETINGS	PRESENTATIONS [2]	CORRESPONDENCE	INVITATIONS TO PUBLIC INFORMATION CENTRES
5. Federal Departments	Indian Affairs & Northern Development			•	•	•
6. Railway Companies	Canadian National Railways		•	-	•	•
	Canadian Pacific Railways		•	-	•	•
	Toronto Hamilton & Buffalo Railway		•	-	•	•
7. General Public				•	•	•
8. Community Interest Groups	Durand Neighbourhood Association		• [3]	•	•	•
	North End Residents Association		•	•	•	•
	Downtown Business Association		•	•	•	•
	Old King Street Village B.I.A.		•	•	•	•
	Board of Management Downtown B.I.A.		•	•	•	•
	Locke Place Businessmen's Assoc.		•	•	•	•
	Westdale Merchants Association		•	•	•	•
	Hess Village Mall Authority			•	•	•
	Downtown James Street North Businessmen's Assoc.		•	•	•	•
	Architectural Conservancy of Ontario		•	•	•	•
	Clear Hamilton of Pollution		•	•	•	•
	The Head-of-the Lake Historical Society			•	•	
	Historical Board		•	•	•	•
	Jackson Square Mall Assoc.		•	•	•	•
	Metropolitan Hamilton Real Estate Board		•	•	•	•
	Coalition on Sensible Transit		•	•	•	•
	Hamilton District Chamber of Commerce		•	•	•	•
	Historical Society		•	•	•	•
	Hamilton Automobile Club		•	•	•	•
	Hamilton LACAC		•	•	•	•
	Hamilton Social Planning and Research Council		•	•	•	•
	Halton Ecological and Environmental Advisory Committee			-	•	•
	James Street Terrace Association		•	•	•	•
	Beth Jacob Cemetery		•	•	•	•
	Salvation Army		•	•	•	•
	Stelco				•	
	Philpott Memorial Church		•	•	•	•

5.3 Position Papers

Many informative comments were received from the public and several groups and individuals submitted formal responses and position papers to the Project Team. These were reviewed and included in the refinements to the final evaluation analysis and selection process.

Many of the responses were received during the weeks following the series of Public Information Centres. Documented and well-articulated responses were received from the most active interest groups. These included position papers received from the following groups:

- Downtown Hamilton Business Improvement Area
- First Place
- Blind Organization of Ontario with Self-Help Tactics (BOOST)
- Hamilton Automobile Club
- Royal Botanical Gardens
- Local Architectual Conservancy Advisory Committee (LACAC)
- Royal Connaught Hotel
- Philpott Memorial Church
- Downtown James Street Business Association
- Parks and Recreation Committee
- Planning and Development Committee
- G.S. Dunn & Co. Ltd.
- Hamilton & District Chamber of Commerce
- Hamilton Historical Board
- Architectural Conservancy of Ontario
- Coalition on Sensible Transit (COST)
- Bay Area Residents
- Durand Neighbourhood Association
- Board of Education for the City of Hamilton

- Hamilton and District Council of Women
- Kirkendall-Strathcona Neighbourhood House
- North End Neighbourhood Association
- Wentworth Condominium Association #45
- NO ALRT on York Street
- Hamilton Construction Association
- Stoney Creek Chamber of Commerce
- Hamilton Real Estate Board
- The Hamilton and District Soccer Association
- The Hamilton Area Committee of the Communist Party of Canada
- The Social Planning and Research Council of Hamilton and District
- James Street Terrace Business Association

APPENDIX 'C'

TERMS OF REFERENCE

HAMILTON

GO RAIL

EXTENSION STUDY

CONSULTANT TERMS OF REFERENCE

Toronto Area
Coordinating Office

February, 1987

BACKGROUND

Since the introduction of commuter rail operations, from Oakville to Pickering in 1967, the demand for improved and/or extended service has been increasing. To meet this growing demand, the Government announced a Interregional Rapid Transit Strategy in the fall of 1981. One of the major components of this strategy was the provision of GO Transit rail service from Oakville to Hamilton, using advanced light rail transit equipment on a separate right of way.

With the 1985 decision to utilize conventional rail technology in lieu of ALRT technology, there is now a need to re-study the section from Burlington to Hamilton. Only existing rail corridors will be considered in the determination of the most appropriate route, based upon the decision to stay with conventional rail technology. Since there was only one rail corridor between Oakville and Burlington, the Ministry has undertaken initial service improvements for this section.

RELATED STUDIES

Under the direction of GO Transit, the railroad companies (CN and CP) have been requested to carry out operational reviews to determine the infrastructure improvements required for commuter rail use of their existing facilities. These studies will be completed in the near future.

During the GO-ALRT study a wide variety of information was compiled. This material is currently available in draft form from GO Transit.

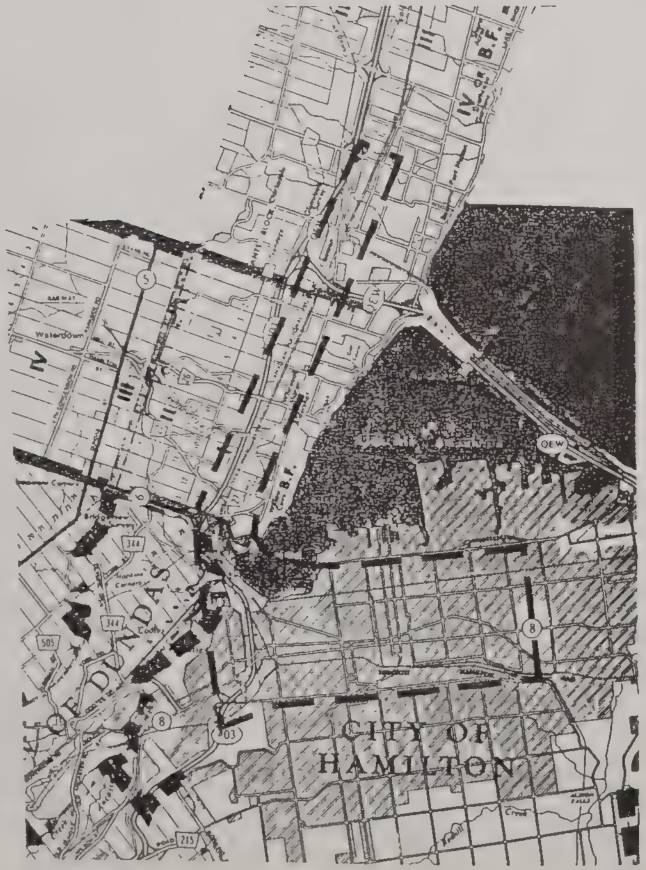
STUDY AREA

The study area for the Burlington to Hamilton project is indicated on the attached key plan and is from just west of the Burlington GO Station westerly to the Hamilton Central Business District, encompassing both railway corridors into the downtown section. The area of intensive study is expected to fall within 100 metre ± of the existing rail corridors.

STUDY OBJECTIVE

The objective of this study is to recommend an alignment and operating/implementation strategy for expanded GO Train service into the City of Hamilton that is satisfactory to the City of Hamilton, the Regional Municipality of Hamilton-Wentworth, the railway companies and the Province of Ontario.

KEY PLAN



▬ ▬ ▪ STUDY AREA

SCOPE OF THE STUDY

The study is composed of an Overview component and a Planning component.

Overview Component

The Overview Component of the study will contain a general overview of the major issues and conditions associated with service expansion between Burlington and Hamilton and determine the direction for the Planning Component.

The overview will, in general:

- confirm the purpose of the study;
- review material gathered under the GO-ALRT projects;
- identify major issues to be addressed;
- assess available user/demand information for initial interim and ultimate level of service requirements;
- assess reports from CP/CN on operational review;
- confirm preliminary alternatives and sub-options;
- carry out a preliminary assessment of the impact on social, natural, cultural features, land use implications, economic spinoffs, development potential, urban fit, transportation systems, engineering, operational characteristics, etc.
- review the cost/benefit (in general terms) of the various alternatives;
- establish options to meet the Environmental Assessment Act requirements (as alluded to under the Report Preparation Section of this paper);
- define the public involvement program.

After completing the above general analysis the consultant will prepare a report documenting their findings. The report will be reviewed by the Project Team and the Technical Steering Committee (see Study Organization section). Presentation of the findings and ensuing recommendations will be made to the M.T.C./GO Coordinating committee, Municipal Councils, etc. The results of the Overview will establish the requirements for the remainder of the study.

Planning Component

As outlined above, the exact requirements for this component of the study will depend on the results of the Overview Component. The requirements may vary from essentially a do-nothing option (if the Overview reveals that implementation of the project is not justified) to a full environmental assessment. If it is decided that a full environmental assessment is required, the planning study will consist of the following three phases:

i Route planning including analysis and comparison of alternative solutions to establishing an approved alignment.

ii Completion of preliminary designs to the level required to produce a calculated alignment and to obtain environmental approval.

iii Preparation of an Environmental Assessment Report, including an engineering component satisfying the requirements of the traditional Preliminary Design Report (Part II, Engineering Component).

There will be strong emphasis on public involvement throughout the study process, as well as presentations to the Provincial Ministries, Municipal Councils and various interest groups.

1. ROUTE PLANNING PHASE

The initial phase of the study will demonstrate the rationale for the proposed facility and develop a concept to address the need/demand in the corridor.

The concept could vary based on need/demand and the railway companies' determination of improvements required to the railways infrastructure. Appropriate alternatives to the undertaking, such as doing nothing or developing alternative transportation modes shall be considered in accordance with the Environmental Assessment Act.

The following list outlines activities which must be carried out during this phase. This list is not all inclusive. It may be determined, as the study proceeds, that other activities are required:

- develop/document rationale for the undertaking to fulfill the requirements of the E.A. Act;

- obtain/assess available user/demand information for initial, interim and ultimate level of service requirements;

- review/assess reports from CP/CN on operational review (see Related Studies section);

- update/expand the social, cultural and economic environmental data base gathered for the GO-ALRT study;

- develop route alternatives on 1 - 500 base plans marked up with identified constraints;

  NOTE:

  There are two basic alternatives for bringing increased GO Train service into Hamilton. One is to upgrade the existing GO Train service which utilizes the C.N.R. alignment into the existing CN station. The second would be to utilize the CPR/TH&B alignment which would utilize the C.N. corridor from Burlington to the Bayview Junction and then the CPR/TH&B into the TH&B station.

- record existing noise levels along route alternatives to identify potential noise impacts;

NOTE:

discuss noise terms of reference with M.T.C. and M.O.E. noise specialist prior to initiation of study.

- determine intermediate and terminal sites, intermodal opportunities, station/surface transit interface facilities, storage facilities (this activity includes a review of existing local transit service);
- review/assess parallel bus service strategies developed by GO Transit;
- develop a broad operational system plan to demonstrate the feasibility of integrating local and intercity bus with the GO facilities;
- prepare a route analysis and evaluation on all identified alternatives including station and storage sites considering impacts on social, natural and cultural features, land use implications, transportation systems, engineering, operational characteristics and cost (operating and capital);
- determine the implications of a downtown terminal station considering economic spinoffs, developmental potential, urban fit, etc.;
- prepare cost estimates for route alternatives as required for cost comparisons;
- present alternatives to senior Ministry staff and others as required, and select an alternative;
- obtain the approval of municipal technical and elected officials for the alternative selected by the Ministry;
- initiate and maintain a public involvement program throughout the study by holding information centres, advertised in advance through the local media and brochures and also meeting with interest groups as requested. Prepare all necessary visual aids required for these meetings and summaries of comments received;
- identify, assess and document all environmental issues and concerns in accordance with the requirements of the Environmental Assessment Act, R.S.O. 1980.

2. PRELIMINARY DESIGN PHASE

Following the selection of an alignment and station locations, approval by the appropriate municipal councils, and the public information centres, the Consultant shall undertake the preliminary design phase of the study. In conducting this phase of the study, it will be necessary to:

- prepare a preliminary design plan and profile/calculated alignment of the selected route at an appropriate metric scale, taking into account cross-section and drainage requirements as determined from the drainage mosaic and report;
- carry out a drainage study, which will include culvert sizing and hydrology studies for any river and stream crossing (as directed by M.T.C. Structural Office);
- identify and resolve all matters pertaining to property, road crossings, utility corridor crossings, and municipal concerns and liaise with Ministry officials and others as necessary;
- identify, assess and document all environmental issues along with proposed mitigation measures relative to the selected route in accordance with the requirements of the Environmental Assessment Act;
- prepare cost estimates on a regular basis throughout the preliminary design process;
- calculate the alignments of the approved route and prepare a survey request;
- develop a preliminary staging plan and cross sections indicating the construction sequence of the proposed facility together with associated structures, stations, grade separations and municipal road changes.

3. REPORT PREPARATION

After all aspects of the study have been investigated, an Environmental Assessment Report for the Group "A" project which fulfils the requirements of the Environmental Assessment Act, R.S.O. 1980 will be prepared. The Report shall document the complete planning process associated with the project, and include selective preliminary and detail design information, as necessary, for the identified "environmentally significant areas/issues".

Guidelines for the preparation of an Environmental Assessment Report - One Stage Submission will be made available to the Consultant.

The report shall include a separate engineering component satisfying the requirements of the traditional Preliminary Design Report (PDR), Part II Engineering Component. This component shall include engineering plates providing the details of the recommended horizontal and vertical alignment. Guidelines for the preparation of the PDR, Part II Engineering Component will be provided on request.

The Consultant shall prepare and submit a draft copy to the Ministry for review and approval. Upon the approval of the M.T.C., the consultant shall complete all text, graphics and plans in order to allow the final reports to be printed by the Ministry. The consultant shall liaise with the Ministry's Printing Office, providing them with all information, plan, draft report, etc., as necessary.

In addition to the tasks outlined above for the three phases of the study, the Consultant shall:

- review and become familiar with all materials, studies, reports, correspondence, plans and adjacent work which may relate to or affect the conduct of the study;

- liaise with all other government agencies, public authorities, private and public corporations and private individuals as required to ensure that all information required for the study is identified, collected and considered for the smooth and orderly conduct of the study. The first contact will be made by the Ministry; after the first contact is established, the Consultant shall arrange any additional meetings as required.

- make presentations to Ministry staff, municipal technical and elected officials, and others as required;

- hold regular project progress meetings with the Project Team. These meetings shall be scheduled on a regular basis once every month. Additional meetings may be required with the Project Team, an Internal Team consisting of representatives from other offices within the Ministry, a Municipal Team, and an External Team consisting of representatives from other Ministries, Agencies, Utility Companies and Corporations;

- prepare and distribute agenda and minutes of all meetings during the conduct of the study. Agenda for all regular progress meetings shall be distributed one week prior to the scheduled meeting date and shall be structured to allow for input by study team members at specific times during the day of the meeting;

- provide a system of project management, cost and progress accounting, and submit monthly updates of these in accordance with approved Ministry Format;

NOTE:

The consultant may be required to present evidence at hearings of the Environmental Assessment Board and/or other tribunals. This list is not all inclusive. It may be determined, as the study proceeds, that other activities are required.

MINISTRY SERVICES

The Ministry shall provide the Consultant with the following information and services;

- available data from GO-ALRT Hamilton and Burlington studies (GO Transit files);
- CN/CP Operational Review (GO Transit);
- demand analysis and forecasts (M.T.C.);
- parallel GO Bus services strategies (GO Transit)
- copies of forms and formats applicable to this study (M.T.C.);
- printing of brochures and reports (M.T.C.);
- general direction in the provision of services;
- preliminary property cost estimates (M.T.C.);
- drainage mosaic and report (M.T.C.);
- 1986 base photography;
- preliminary soils and foundations information (M.T.C.);

STUDY ORGANIZATION

This study is a joint Provincial/Municipal undertaking. The Manager of the Toronto Area Coordinating Office, Mr. F. Norman, in conjunction with the Commissioner of Transportation, Regional Municipality of Hamilton-Wentworth, Mr. H. Schweinbenz, will both be responsible for the general direction of the study as joint chairmen of the Technical Steering Committee. They will be assisted by a "Project Team" composed of:

Appendix B

Natural Environment Assessment

GO TRAIN SERVICE EXPANSION PROGRAM
BURLINGTON TO HAMILTON
ASSESSMENT OF NATURAL ENVIRONMENT

Prepared for

McCormick Rankin

October 1988

Ecoplans Ltd.
105 Lexington Road, Unit 5
Waterloo, Ontario
N2J 4R8

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1.0 INTRODUCTION

1.1 Study Background

Government of Ontario (GO) Train service currently operates in the Lakeshore corridor between Oakville and Pickering, with 3 daily trains extending to the Hamilton CN Station. Expanded service is projected to be in place between Oakville and Burlington within five years. The current study was initiated to investigate the feasibility of expanding GO Train service between Burlington and Hamilton.

1.2 Study Planning Process

The study of the expansion of GO Train service between Burlington and Hamilton is a joint provincial/municipal undertaking, initiated by GO Transit and with participation by the Ontario Ministry of Transportation, the Regional Municipality of Hamilton-Wentworth and the Regional Municipality of Halton. A Project Team comprising representatives from the above groups has directed the study with the assistance of McCormick Rankin, consulting engineers, and with input from local municipal staff, other government agencies, technical organizations, concerned interest groups, local elected officials and interested individuals.

The study has been conducted in accordance with the requirements of the Environmental Assessment Act. Ecoplans Ltd. was retained by McCormick Rankin to assist the Project Team in evaluating the natural environmental

impact component of the study. The present report has been prepared as a supplementary document to be appended to the Environmental Assessment Report prepared for the project.

1.3 Alternatives to GO Train Service

Several alternatives to improved conventional GO Train service between Burlington and Hamilton were considered during the study process. These alternatives have been rejected for the reasons discussed in the main document.

• Light Rail Link:	Advanced Light Rail Transit (ALRT) or Streetcar Link Between Central Hamilton and Burlington GO Station
• Bus Link:	Various Levels of Improved Service such as Additional Buses, Dedicated Bus Lanes or Bus only Roadways Between Central Hamilton and Burlington GO Station
• Roadways:	Additional Roadway Capacity Between Hamilton and Burlington
• Other:	Non-Conventional Commuter Modes such as Airplane, Ferry and Bicycle

1.4 Description of GO Train Alternatives

1.4.1 CN Burlington Rail Corridor

Between Burlington Station and the Junction with the CP tracks near the Desjardins Canal (Hamilton Junction) the existing CN rail corridor is the only available route. Any increase in the number of GO trains above current levels (3 trains each way daily) will require the provision of at least one (1) additional track. At an ultimate (full) level of service (described in main report) a total of two (2) additional tracks could be required.

Between the Desjardins Canal and a Hamilton Station terminal one of two available rail corridors is to be recommended. The two alternatives are described below.

1.4.2 CN Route - Hamilton Junction to CN Station

This alternative utilizes the existing CN rail corridor along the Hamilton Harbour waterfront past CN's Hamilton Yard to the CN Station. VIA and GO trains use this route at present. Depending on the level of service expansion an addition of one or two tracks would be required.

1.4.3 CP Route - Hamilton Junction to Former TH&B Station

This alternative utilizes the existing CP rail corridor past Kay Drage Park (rehabilitated sanitary landfill site) and the Cathedral of Christ the King through the Hunter Street tunnel to the former TH&B station. The 600 m long Hunter Street tunnel has a single track. CP simulation of the levels of service attainable without change to the existing tunnel indicates that one additional track may be required on the approaches to the tunnel at some point between the 6 (current) and 20 daily train levels.

1.4.4 Stations

GO trains could use the following existing or future rail stations:

- CN Station - The main CN Hamilton station on Murray Street between James and John Streets.
- CP/TH&B Station - The former TH&B Hamilton Station on Hunter Street between James and John Streets.
- Kay Drage Park - A possible new station hear Highway 403 on the CP rail route in the west end of Hamilton. This would involve construction on a rehabilitated landfill site requiring assessment under Section 45 of the Environmental Protection Act (EPA).
- Waterdown - A possible new station on the main CN Rail line near the interchange of Waterdown Road and Highway 403 in Burlington.

1.4.5 Overnight/Storage Yards

Overnight or daytime storage tracks will be required for GO trains. The following rail yards are alternative sites:

- Victoria Avenue CP Yard: at the foot of Hamilton Mountain (Niagara Escarpment) on the CP rail line east of the CP/TH&B station.
- CP/TH&B Station: at the Hunter Street Station in Hamilton
- Aberdeen CP Yard: near the Highway 403/Aberdeen Avenue interchange in the west end of Hamilton.
- Hamilton CN Yard: on the Hamilton Waterfront between Bay Street and Dundurn Castle.
- Aldershot CN Yard: on the CN Main Line between Waterdown Road and King Road in Burlington.

The study area setting including alternative rail routes, GO stations and storage yards is shown in Figure 1.

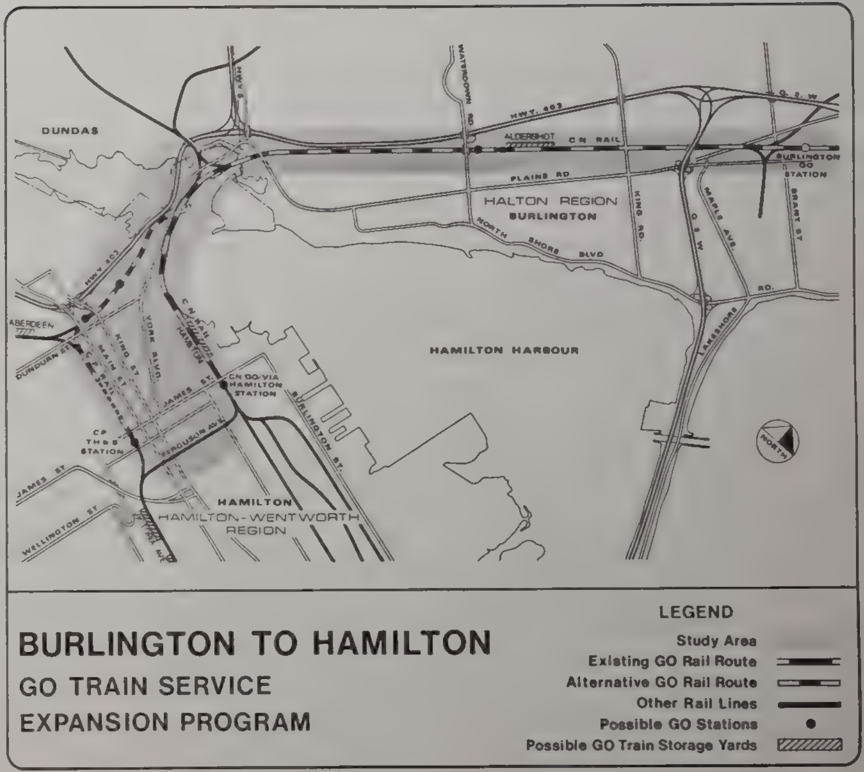

FIGURE 1

Study Area Setting

2.0 EXISTING CONDITIONS

2.1 Data Collection

An extensive environmental and natural heritage database collected during the earlier GO ALRT project within the study area was reviewed by Ecoplans Ltd. This information was contained in two main reports (1985) supplemented by several technical working papers (1983). The two reports are entitled:

GO ALRT. 1985. Environmental Status Statement - Burlington Project. Walker's Line to 1.2 km East of Highway 6. Fenco Engineers Inc.

GO ALRT. 1985. Hamilton Project - Route Planning Study, Oakville to Hamilton Section. Status Report. Giffels Engineering Ltd.

The data review indicated that although the existing data base was quite extensive, minor updating of information was required in several areas, particularly vegetation, wildlife, Environmentally Sensitive Areas (ESAs), fisheries, heritage/archaeological features, surface water and recreation/parks. The data review also determined that landfill site status and industrial/commercial uses in proximity to route alternatives should be documented.

The supplementary data collection for the above factors was conducted as follows:

- Vegetation/Wildlife: Field updating by Ecoplans Ltd., fall 1987, and spring 1988 as well as contacts with relevant agencies (Royal Botanical Gardens [RBG], Hamilton Region Conservation Authority [HRCA], Halton Region Conservation Authority [HRCA], Ministry of Natural Resources [MNR] in 1987/1988.

- Environmentally Sensitive Areas (ESAs): Field reconnaissance (vegetation, wildlife, fall, 1987), contact with above agencies, and review of wetland classifications provided by MNR, HRCA.

- Fisheries: Information base updated by Mr. C. Portt, fisheries biologist with extensive experience in study area and Hamilton Harbour in particular. Additional fisheries information provided by Mr. V. Cairns, Canada Centre for Inland Waters (CCIW) and Ms. B. Axon, HRCA.

- Heritage/Archaeological Features: Heritage features inventory (buildings and structures of historical/architectural significance) updated through contacts with Local Architectural Conservation Advisory Committees (LACAC) in Burlington and Hamilton and the Region of Halton Planning Department. Archaeological features inventory updated through contacts with the Ministry of Culture and Communications, Heritage Branch, Archaeology Unit.

- Surface Water: Creeks and tributaries within the study area were assessed during a field reconnaissance in the summer and fall of 1987 to check on channel features, flows, bottom substrates and general stream quality.

- Recreation/Parks: Information updated at Kay Drage Park due to proximity of CP tracks, former landfill status, and potential site for GO train station construction. Vegetation information collected at Mountain Face Park (Niagara Escarpment) in May 1988 to assess potential constraints associated with upgrading of Victoria Avenue rail yard.

- Landfill Sites: Location and status of landfill sites in study area assessed through review of Ministry of the Environment (MOE; 1980, 1984) Waste Site Inventory data. Updated information on the former Kay Drage landfill site obtained through contacts with MOE staff (Hamilton) and a review of available consulting studies (Morrison Beatty Ltd. 1985) conducted at the site.

- Industrial/Commercial Uses: Industrial and Commercial facilities located adjacent to alternative rail corridors were identified through a review of Insurance Plan records for the Cities of Burlington and Hamilton. Emphasis was placed on identifying both existing and former industrial/commercial uses to provide a general database for use in assessing potential contaminant concerns associated with rail expansion activities (boring, cuts).

Background information concerning biophysical features and heritage sites (factsheets and other sources), and photographs of the study area are on file at Ecoplans Ltd. in Waterloo.

2.2 Data Presentation and Results

Due to the considerable data base available and the size of the study area the mapping and description of biophysical and heritage features was limited to the vicinity of the various route alternatives. The assessment was generally conducted within a 100 metre corridor encompassing the railway rights-of-way. This corridor width was chosen because it encompasses the expected area of primary and secondary impacts associated with track addition, yard upgrading, bridge/culvert modifications, and cut/fill operations.

In special concern areas such as the proposed Waterdown Road GO Station facility the study area was expanded on both sides of Highway 403 to assess potential impacts associated with the station construction, interchange work, parking facilities and a possible North Service road extension to the north of the 403 through the southwest corner of Sassafras Woods ESA #4. In addition, general biophysical features located outside but in proximity to the study corridor were mapped or discussed where necessary to provide context for the assessment of environmental impacts.

To facilitate the description and evaluation of existing biophysical and heritage features, the data have been summarized in a series of Tables for the following route segments:

- CN BURLINGTON SEGMENT:
  Table 1 - Bayview Junction to Burlington Station
  Table 2 - Hamilton Junction to Bayview Junction

- CP ALTERNATIVE:
  Table 3 - Main Street Junction to Hamilton Junction
  Table 4 - Queen Street to Main Street Junction
  Table 5 - Hunter Street Tunnel to Victoria Avenue Yard

- CN ALTERNATIVE
  Table 6 - CN Station to Hamilton Junction

Within each route segment biophysical and heritage features have been mapped with appropriate symbols or numbers as indicated in Plates 1 to 4 located at the end of this report.

The numbered units have been mapped in ascending order from the Hamilton to Burlington areas in keeping with the route sequence outlined by the Study Team at the beginning of the study. However as the study progressed the route alternative descriptions were reversed in favour of a Burlington to Hamilton progression. Rather than reverse the numbering sequence in this appended report we have ordered the individual tables by route segment to reflect the Burlington to Hamilton progression.

Within each table each resource factor has been evaluated in terms of: location, description, general recommendations, reference (numbered), data limitations and environmental significance. The following resource factors were assessed: geology/geomorphology, soils, hydrogeology, surface water quality/quantity, vegetation, ESAs, wildlife, fisheries, landfill sites, industrial/commercial facilities, heritage features (man-made), archaeology sites, and parks/recreation.

Eighty-two vegetation cover types (V-1, V-2) were inventoried (GO ALRT and current study) and mapped in Plates 1 to 4. The vegetation assessment criteria and vegetation cover type summary (unit #, dominant cover type, tree diameters, botanical quality and sensitivity rating, and significant species/issues) are summarized in Appendix A.

Tables 1 to 6 are presented below.

TABLE 1

CN BURLINGTON: BAYVIEW JUNCTION TO BURLINGTON STATION (PLATES 1-3)

ENVIRONMENTAL ISSUES

FACTOR	LOCATION	DESCRIPTION	RECOMMENDATIONS	REFERENCE	DATA GAPS/LIMITATIONS
GEOLOGY/GEOMORPHOLOGY	Grindstone Creek and Royal Botanical Gardens Area (Plate 3)	Steep side hills and ravines along R.O.W. are susceptible to soil slippage and erosion of exposed shales during construction disturbance. Some side hill seepage may contribute to erosion concerns along R.O.W.	Incorporate ravine/sidehill slope protection measures along R.O.W. at detailed design stage.	1, 5	Location of seepage zones and method of treatment should be determined prior to construction.
	Defined stream ravines at R.O.W. crossings throughout section (Plates 2, 3)	Culvert upgrading, bridge work, track widening may expose erodible shales during construction. Deep ravine crossing at Grindstone Creek (Hidden Valley Road).	Incorporate erosion control measures at detailed design stage.	1, 5	
	Minor Stream crossings (Falcon, Indian, Hager, Rambo Creeks) Plates 1, 2	Erosion potential during construction, but of generally minor nature where channel is poorly defined.	Site-specific erosion control during construction work.	6	
	Mineral Resource Protection Areas 1 (south of Snake Road and 403), 2 (403/Waterdown Road - NW quadrant)	Sites identified by MNR where major mineral resource deposits known to exist.	Sites are not affected by proposed undertaking. Site 1 lies 100 m to south of tracks. Site 2 located north of 403.	1, 3, 38	
	Earth Science Areas of Natural and Scientific Interests (ANSI's)	Old Nelson Quarry, Grindstone Creek (north of 403) and King City Quarry (Highway 6)	All sites located off R.O.W., to north of 403. None affected by proposed undertaking.	7	
SOILS	Grindstone Creek and Royal Botanical Gardens Area. Steep side slopes through section from Bayview Junction to Beth Jacobs Cemetery (H32) (Plate 3)	Steep side-hills and ravines are susceptible to soil slippage during construction disturbance along R.O.W.	Incorporate slope protection measures in detailed design stage.	1, 5	
	Highway 6 to Waterdown Rd. (Plates 2, 3)	Area characterized by Oneida clay loam, Oneida loam, Trafalgar silty clay loam along R.O.W. These soils have a high slope erodibility potential and are sensitive to compaction, rutting, mixing and erosion. History of brick clay extraction in area (shales).	Incorporate site-specific erosion control and construction mitigation measures at detailed design stage. Pre-construction soils testing may be required.	1, 2, 4, 5	

* Environmentally Significant Issues

TABLE 1

CN BURLINGTON: BAYVIEW JUNCTION TO BURLINGTON STATION (PLATES 1-3)

ENVIRONMENTAL ISSUES

FACTOR	LOCATION	DESCRIPTION	RECOMMENDATIONS	REFERENCE	DATA GAPS/LIMITATIONS
SOILS (continued)	Royal Botanical Gardens Area (Plate 3)	Disturbance to surface soils along R.O.W. due to construction activities may include mixing, rutting, compaction, surface erosion. If impacts extend to RBG land, disturbance may affect subsequent soils use or rehabilitation potential.	Incorporate appropriate mitigation in detailed design stage (access control, working zone, etc.).	2, 5	
	Defined stream channels, particularly Grindstone Creek crossing at Hidden Valley Road (Plate 2)	Culvert upgrading, slope cuts/fills, track widening may promote soil erosion, compaction particularly at Grindstone Creek crossing.	Incorporate relevant mitigation at detailed design stage.	1, 4, 5	
	Proposed Waterdown Road Station (Plate 2)	Potential soils impacts due to compaction, slope erosion, surface erosion during construction of station, parking facilities, interchanges. Soils in area include ravine soils, Oneida loam, and Trafalgar silty clay loams (see concerns above).	Relevant mitigation required at detailed design stage to address these concerns.	1, 4	Site-specific soils testing will be required.
	Proposed Aldershot Yard Upgrading (Plate 2)	Springvale and Winona sandy loams present, possibly Trafalgar silty clay loam as well. See concerns above. Sandy loams have slight erosion potential.	As above.	1, 4	As above.
HYDROGEOLOGY	Bayview Junction to Waterdown Road (Plates 2, 3)	Groundwater may be located near the ground surface in some areas and may be exposed during cut operations. Artesian water flow was encountered during 403 construction. Some side hill seepage may be encountered, particularly along slopes in the Grindstone Creek/Royal Botanical Gardens area. Groundwater supplies derived from confined aquifers within shale deposits - general absence of large shallow aquifers. Potential effects limited to widening of existing cut sections in rail R.O.W.	No significant groundwater areas identified. Much of area relies on piped water service. Average static water level at 7.1 metres. Interception unlikely unless cuts exceed this depth. Mitigation for treatment of seepage problems should be determined at detailed design stage.	1, 3, 5	Locations of seepage zones and aquifer areas not identified.

* Environmentally Significant Issues

ENVIRONMENTAL ISSUES

FACTOR		LOCATION	DESCRIPTION	RECOMMENDATIONS	REFERENCE	DATA GAPS/LIMITATIONS
HYDROGEOLOGY (continued)		Waterdown Road to Burlington Station (Plates 1, 2)	Proposed upgrading, culvert, bridge work will have low potential impact on groundwater quantity/quality. Much of work involves minor surface alterations related to retaining walls, culvert extensions, drainage ditch alterations, etc.	As above.	1, 3	As above.
SURFACE WATER QUALITY/QUANTITY		Old Cootes Paradise outlet (Plate 3)	Rated low in water quality. Linear pond, steep slopes. Track addition on north side could result in some railway fill at east end.	Measures to reduce further water quality degradation should be incorporated at detailed design stage (sedimentation control, clean fill, etc.) if track added to north.	2, 11, 19	
		Sunfish Pond (Plate 3)	Small oblong pond, with steep side slopes. Susceptible to sedimentation. Track addition on south side could result in some railway fill to pond at north end.	As above, if track added to south.	2, 11, 19	No water quality rating documented. Status should be evaluated in future.
		Feeder Tributaries to Grindstone Creek and Marsh (Plates 2, 3)	Require culvert upgrading to accommodate extra trackage. Minor tributary systems.	Incorporate erosion control measures at detailed design stage.	1, 2	
		Hendrie's Ponds (Plate 3)	Small ponds located within Mineral Resource Protection Area 1. Shallow, turbid, rated medium in quality. No direct impact by R.O.W. work. Culvert upgrading required at small feeder tributary to east of Old York Road.	Incorporate erosion control measures at culvert site (detailed design stage).	1, 2, 11	Water quality data lacking.
	*	Grindstone Creek at Hidden Valley Road (Plate 2)	Major surface water feature. Receives local groundwater seepage upstream (escarpment). Warmwater system, high coliform bacteria and phosphorus levels. Receives 403 runoff (sand, silt, salt, etc.). Sedimentation concerns due to bridge work and fills at Hidden Valley Road crossing. Also minor cut/fill at tributary crossings.	Utilize state-of-the-art erosion control measures (detailed design stage).	1, 12	

* Environmentally Significant Issues

ENVIRONMENTAL ISSUES

FACTOR	LOCATION	DESCRIPTION	RECOMMENDATIONS	REFERENCE	DATA GAPS/LIMITATIONS
SURFACE WATER QUALITY/QUANTITY (continued)	Proposed Waterdown Road Station Site (Plate 2)	Existing intermittent tributary to Grindstone Creek located within proposed construction area (Vegetation units V-49, V-50). Depending on nature of runoff control, downstream channel may receive elevated levels of silt, sand and salt from parking site. Pond system to east of Waterdown Road south of 403 should not be affected by undertaking (see Vegetation unit V-57).	Options to minimize sediment and salt inputs should be addressed at detailed design stage. H.R.C.A. staff have requested that creek should be maintained in open channel state to greatest extent possible. Present Authority policy requires that under Regional (Hurricane Hazel) Storm conditions water levels in day time parking areas should not exceed 0.43 metres in flood depth to protect vehicles and other property. Appropriate storm water controls will be required to achieve this objective.	1, 6, 12, 13	Water quantity/quality data (seasonal pulses) not collected.
	Falcon Creek, Indian Creek, Hager Creek, Rambo Creek (Plates 1 and 2)	Undertaking requires culvert/bridge upgrading at stream crossings. Streams are urbanized, exhibit low water quality and are intermittent.	Incorporate relevant erosion control measures at detailed design stage. Flooding concerns at Hager and Rambo Creeks to be addressed (proposed retention pond).	1, 2, 6, 8, 9, 10, 12	
VEGETATION	* 1. Hamilton Harbour/ Sunfish Pond (Plate 3)	Units V-19, 20, 21, 25. Wooded embankments, shores, and emergent aquatic vegetation margin. These ensure slope stability and provide wildlife/fisheries habitat.	Potential impacts and mitigation evaluated in description of preferred alternative.	13, 25	
	* 2. Old Cootes Paradise Outlet (Plate 3)	Units V-23, 24, 26. Ravine woodlands and former Cootes Paradise form part of Hamilton-Wentworth ESA #16 (RBG-Cootes Paradise) and Area of Natural and Scientific Interest (ANSI). Chinquapin oak present.	As above.	13, 25, 26	
	* 3. Royal Botanical Gardens/ Grindstone Creek (Plate 3)	Woodlands associated with Grindstone Creek (Halton ESA #3) known to contain at least 24 plant species of national, provincial or regional significance north and south of the existing right-of-way. Units V-19 - V-36.	As above.	13, 21, 22, 23, 24, 25	

* Environmentally Significant Issues

TABLE 1

CN BURLINGTON: BAYVIEW JUNCTION TO BURLINGTON STATION (PLATES 1-3)

ENVIRONMENTAL ISSUES

FACTOR	LOCATION	DESCRIPTION	RECOMMENDATIONS	REFERENCE	DATA GAPS/LIMITATIONS
VEGETATION (continued)	4. Hidden Valley Road to Waterdown Road (Plate 2)	Steep forested ravine walls and woodlot along Grindstone Creek and its tributaries to the east. Units V-37 to V-48.	Potential impacts and mitigation evaluated in description of preferred alternative.	13	
*	5. East of Waterdown Road (Plate 2) a) Northeast of Highway 403	Units V-77 to V-82 Sassafras Woods (Halton Region ESA #4) known to contain at least 6 plant species of national provincial or regional significance, in proximity to proposed interchange. One of 36 identified unprotected Carolinian sites in southern Ontario.	Southwest corner (units V-77, V-79) may be affected by service road construction if interchange reconstructed.	13, 23, 24 27, 28, 29	
	b) Highway 403 to CN tracks, east of Waterdown Rd. (MGS property)	Units V-49, V-50. Remnant woodland along Grindstone Creek tributary. One species of regional significance observed; wildlife habitat linkage.	Site of proposed Waterdown GO station. Impacts/mitigation assessed at preferred alternative stage.	13	
	c) CN lands east of MGS property (potential parking lot expansion and Aldershot Yard)	Units V-52 to V-73 Oak woodlands, wetlands and old field succession adjacent to Highway 403, connecting to woodlands along Falcon Creek to east. Wildlife corridor to Niagara Escarpment. Regionally Significant plant species (Black oak, bristly greenbriar); wildlife habitat linkage.	Evaluation and mitigation assessed at preferred alternative stage.	13, 27	
	d) Grove Park	Unit V-72. Grove of mature mixed oaks (Red, White).	No direct impact from undertaking.	13	
	6. West of King Road (Plate 2)	Two small swamp woodlots with immature elm and ash cover. (Units V-74, V-75).	Woodlots isolated, low in quality. Not directly impacted by undertaking.	13	

* Environmentally Significant Issues

ENVIRONMENTAL ISSUES

FACTOR		LOCATION	DESCRIPTION	RECOMMENDATIONS	REFERENCE	DATA GAPS/LIMITATIONS
ENVIRONMENTALLY SENSITIVE AREAS	*	Grindstone Creek (Plates 2 and 3)	Halton Region ESA No. 3. Grindstone Creek Valley. Provincially significant Class 2 wetland. Fulfills 5 of 9 possible ESA criteria: . distinctive and unusual landform . the best migratory bird stopover in the Region . unusually high diversity of biological communities and associated plants and animals . habitat for nationally, provincially and regionally rare plants and animals . scientific value for bird watching, migration studies, and ecological study in conjunction with RBG. Undertaking may affect forested sections, ravine systems, and fish/wildlife breeding habitats and corridors.	1. Identify significant resource elements during assessment of alternatives. 2. Minimize impacts through selection of preferred alternative. 3. Evaluate and mitigate impacts in discussion of preferred alternative.	18, 23, 24, 25	
	*	Waterdown Road (Plate 2)	Halton Region ESA No. 4. Sassafras Woods. One of 36 critical unprotected natural areas in the Carolinian Life Zone of Canada. Fulfills two ESA criteria: . area is a habitat with limited representation in Ontario and Canada . area provides habitat for nationally, provincially and regionally rare plants and animals. Possible Waterdown Road interchange and North Service Road construction may have primary and secondary impacts on the western edge and southwest corner of the ESA.	As Above.	6, 13, 23, 24, 27	

* Environmentally Significant Issues

TABLE 1

CN BURLINGTON: BAYVIEW JUNCTION TO BURLINGTON STATION (PLATES 1-3)

ENVIRONMENTAL ISSUES

FACTOR	LOCATION	DESCRIPTION	RECOMMENDATIONS	REFERENCE	DATA GAPS/LIMITATIONS
WILDLIFE	1. Hamilton Harbour/ Sunfish Pond (Plate 3)	- Possible corridors for wildlife movement along shores. May be affected by railway fill addition along steep slopes.	Evaluation and mitigation assessed at preferred alternative stage.	18	Limited knowledge of wildlife movement patterns.
	2. Old Cootes Paradise Outlet (Plate 3)	- Part of Hamilton-Wentworth ESA #16 (RBG-Cootes Paradise) - Possible corridors for wildlife movement along shores and between Grindstone Creek ESA and Cootes Paradise (see Fisheries). - May be affected by railway fill if extra track added.	As above	18	As above
	3. Hamilton Harbour/ Sunfish Pond (Plate 3)	- Spiny Softshell Turtle (threatened in Ontario and Canada. Sightings in 1984 at Sunfish Pond and Grindstone marsh (see Plate 3). Specimen captured near Carroll's Point in 1981. May still be present in area in low numbers. May utilize sandy shores for nesting.	Minimize railway fill impact to shoreline areas to extent possible. Evaluation and mitigation assessed at preferred alternative stage.	34, 35, 39	- no data on nesting locations.
	4. Grindstone Creek Halton ESA #3	- Over 100 species of nesting birds (1978), several (10) uncommon species - Excellent for migrant birds - 268 migrant species recorded (1978) - Large winter resident bird population - 2 uncommon mammals - 2 uncommon snakes - Continuous wooded linkage from escarpment to Hamilton Harbour - Unusually high quality - Tracks cross tributaries leading into Grindstone Creek at 9 locations.	Track widening impacts on vegetation, wildlife, watercourses assessed at preferred alternative stage.	23	No detailed data on species immediately adjacent to tracks.

* Environmentally Significant Issues

TABLE 1

CN BURLINGTON: BAYVIEW JUNCTION TO BURLINGTON STATION (PLATES 1-3)

ENVIRONMENTAL ISSUES

FACTOR		LOCATION	DESCRIPTION	RECOMMENDATIONS	REFERENCE	DATA GAPS/LIMITATIONS
WILDLIFE (continued)	*	5. Sassafras Woods ESA #4 (Plate 2)	- ESA, Carolinian Canada Site (see ESA section) - Potential impact to west edge and southwest corner of ESA by potential interchange and North Service Road construction. - Potential extension of the zone of influence of roadways into the ESA.	Final design requirements subject to MTO decision. Evaluation and mitigation assessed at preferred alternative stage.	13, 23, 27 29	- no data on breeding birds
		6. Woodland/wetland complex on CN Lands east of MGS property (east of Waterdown Road between 403 and CN tracks; (Plate 2)	- High diversity of migrating birds - Green Frog, Bull Frog, Painted Turtle, Snapping Turtle - Good wetland (pond), good herptile habitat - Potential impact from track widening layover yards, expansion of parking lot from Waterdown Station.	- Possible impacts of track widening/ station on pond/field system addressed at preferred alternative stage.	1, 13	- no data on breeding birds - more data needed for reptiles/amphibians.

* Environmentally Significant Issues

TABLE 1

CN BURLINGTON: BAYVIEW JUNCTION TO BURLINGTON STATION (PLATES 1-3)

ENVIRONMENTAL ISSUES

FACTOR	LOCATION	DESCRIPTION	RECOMMENDATIONS	REFERENCE	DATA GAPS/LIMITATIONS
FISHERIES *	1. Sunfish Pond and Grindstone Creek valley (Plates 2 and 3)	Sunfish Pond provides nursery habitat for several fish species including black crappie and bluegill sunfish. A culvert under the existing CNR tracks permits fish movement between Sunfish Pond and the former Cootes Paradise outlet. The outlet is known to provide spawning and nursery habitat for bass. These areas are likely to figure prominently in any future attempts to rehabilitate fisheries in Hamilton Harbour. Again the link between the harbour and Grindstone Creek is important. Grindstone Creek is the only tributary to the harbour where pike spawning has been observed in recent years. The creek supports migratory runs of salmon and trout in the spring and fall and provides nursery habitat for the juveniles. A large population of white suckers also spawns in the creek and other species including brown bullheads move between the harbour and the lower reaches of the creek. Sunfish Pond is a popular angling area.	Avoid infilling and subsequent loss of shallow water habitat if possible. If infilling is required attempt to enhance fisheries habitat along new shoreline. Maintain the connection between Old Cootes Paradise outlet and Sunfish Pond in a manner which will allow fish to move freely between the two areas. Maintain angler access to Sunfish Pond area. Appropriate sediment control and seasonal timing constraints recommended and discussed at preferred alternative stage.	30, 31, 33	Extent of movement between Old Cootes Paradise outlet and Hamilton Harbour not well known.
	2. Other tributaries (Falcon, Indian, Hager, Rambo creeks; Plates 1 and 2)	Ephemeral tributaries. No significant fisheries concerns.	Employ standard erosion and sediment control where required.		
LANDFILL SITES	No active or inactive sites identified within the proposed construction zone.	No concerns		14	

* Environmentally Significant Issues

ENVIRONMENTAL ISSUES

FACTOR	LOCATION	DESCRIPTION	RECOMMENDATIONS	REFERENCE	DATA GAPS/LIMITATIONS
INDUSTRIAL/ COMMERCIAL BUILDINGS	B17 (Plate 2)	Natco Building Supplies, 1971,	Use data base to assess potential contaminant concerns at detailed design stage if necessary.		
	B18	Lumsden Brothers Ltd. Grocery Storage,			
	B19	Aldershot Cold Storage,			
	B20	Aldershot Ltd. 1971,			
	B21	Aldershot Greenhouses Ltd.,			
	B22	Refrigeration and Storage Ltd., 1971			
	B23 (Plate 1)	Auto Repair,			
	B24	Platinum Door/Window Mfg. 1971 [Fiberglass]),			
	B25	Ornamental Iron Works 1971,			
	B26	Voortman Bakery 1971,			
	B27	Dewcan Structures Ltd. 1971 [Steel],			
	B28	Auto Repair,			
	B29	Feed Mill 1971,			
	B30	Reichold Ltd; formerly Niagara Brand Spray Co. 1924,			
	B31	Aldershot Construction; formerly Tip Top Canners 1924,			
	B32	Diesel Equip. Ltd.,			
	B33	IBL [paint] Industries,			
	B34	Barton Tubes Ltd..			
HERITAGE	H32 Beth Jacob Cemetery (Plate 3)	- South of CN tracks, north of Old Snake Road - Reasonably well screened by vegetation	- Maintain vegetation screen where feasible. - Minor fill, no direct impact.	13, 16	
	H31 Grand Order of Israel Cemetery (Plate 3)	- Between Hwy 403 and CN tracks - well screened by vegetation	- Maintain vegetation screen where feasible. - Minor cut/fill; no direct impact.	13, 16	
	H33 Halton Ceramics Ltd. Brickworks (Plate 3)	- Kilns/chimney and low brick building - At present an operational brickworks - "Recommended by Ministry of Citizenship & Culture for inclusion as a potential heritage feature"	- No direct impact anticipated.	1	
	H34 Burlington West Train Station (Plate 1)	- VIA Train Station "scheduled to be decommissioned" - To be removed, relocated or replaced by others prior to GO Train expansion.	No impact since station will not be present at the time of GO Train expansion.	1	

* Environmentally Significant Issues

TABLE 1

CN BURLINGTON: BAYVIEW JUNCTION TO BURLINGTON STATION (PLATES 1-3)

ENVIRONMENTAL ISSUES

FACTOR		LOCATION	DESCRIPTION	RECOMMENDATIONS	REFERENCE	DATA GAPS/LIMITATIONS
PARKS/RECREATION	P7	Valley Inn Hotel Park	- Public park - Possible disturbance of recreational activities during construction - Caution should be exercised during construction due to steep slopes - Angling on adjacent ponds (see Fisheries).	- Address concerns in detail design stage. - No direct impact from railway fill anticipated.	16	
	P8	Pedestrian Bridge over CN track (to RBG Spring Garden), south of Plains Rd. (Plate 3)		- No direct impact.		
	P9	Spring Garden Park (RBG) (Plate 3)	- Public garden, south of CN tracks - Potential disturbance during construction	- Construction will occur within fenced R.O.W.	16	
	P10	Hidden Valley Park (Hidden Valley Park Dr. off Howard Rd.) (Plate 2)	- Pool, picnics, baseball - Passive use, well visited	- No direct park impact.	1	
	P11	Grove Park (Gallagher Rd. and Grove Park Dr.) (Plate 2)	- Picnic areas/passive use - Grove of mature oaks - Rarely used.	- No direct impact to Park. - R.O.W. will be fenced.	1	
	P12	Leighland Park (Leighland Rd. off Brant St.) (Plate 1)	- Tennis courts, soccer field, baseball/scheduled games - Playground for small children	- No direct impact to Park. - Culvert work, drainage ditch alteration confined to fenced R.O.W.	1	
ARCHAEOLOGY	A4	Indian Creek, north of CNR, east of King Road (Plate 1)	On sandy knoll. Thin scatter of late Archaic culteral material. Surface collections made and recorded with MCC.	Site is located north of CNR R.O.W. and should not be affected by track work which is restricted to R.O.W. (culverts, ditch changes, minor fill).		

* Environmentally Significant Issues

TABLE 2

CN BURLINGTON: HAMILTON JUNCTION TO BAYVIEW JUNCTION (SEE PLATE 3)

ENVIRONMENTAL ISSUES

FACTOR	LOCATION	DESCRIPTION	RECOMMENDATIONS	REFERENCE	DATA GAPS/LIMITATIONS
GEOLOGY/GEOMORPHOLOGY	Slopes bordering CNR tracks.	Underlying shales, if exposed by cuts or disturbed during fill placement, are highly erodible. Portions of area have been modified by railway fill. Side slope seepage may be encountered.	Include slope erosion protection in detailed design stage.	2, 5	Location of seepage zones and method of treatment to be determined prior to construction.
SOILS	As above.	Soil materials variable in composition and erodibility. Some fill likely present. Groundwater seeps may contribute to erosion concerns.	As above. Detailed soils testing required at detailed design stage.	2, 5	
HYDROGEOLOGY	As above.	Side hill seepage may be encountered. Reference made to artesian flows in some areas. Area is urbanized and not reliant on wells.	Mitigation to control groundwater problems to be addressed at detailed design stage.	2, 5	
SURFACE WATER QUALITY/QUANTITY	As above.	No permanent streams affected. Track widening should be accommodated within existing R.O.W.	See comments under Fisheries.	2, 11	
VEGETATION	a) West of CNR tracks (Valley Inn Road and vicinity)	Shrub succession on steep slopes, below RBG Ornamental gardens. Low quality sumac, aspen growth.	Include soil stabilization and slope revegetation procedures in mitigation measures at detailed design stage (where affected).	5	
*	b) East of CNR tracks	Units V-17, 18, 19. Wooded embankments, shores, and localized emergent aquatic vegetation margin, providing slope stability and wildlife/fisheries habitat. Located in Hamilton-Wentworth ESA #16 (RBG-Cootes Paradise); no significant plant species in this portion of area. Vegetation of moderate botanical significance. Addition of track along Harbour side would result in railway fill disturbance along portion of slopes.	As above	5	

* Environmentally Significant Issues

TABLE 2

CN BURLINGTON: HAMILTON JUNCTION TO BAYVIEW JUNCTION (SEE PLATE 3)

ENVIRONMENTAL ISSUES

FACTOR	LOCATION	DESCRIPTION	RECOMMENDATIONS	REFERENCE	DATA GAPS/LIMITATIONS
ENVIRONMENTALLY * SENSITIVE AREAS	Hamilton Harbour (Plate 3)	Hamilton-Wentworth Region ESA No. 16 RBG-Cootes Paradise Environmentally Sensitive Area. Also designated an Area of Natural and Scientific Interest (ANSI) by Ontario Ministry of Natural Resources. Also Provincially Significant Class 1 Wetland. Fulfills 7 of 9 possible ESA criteria: . unusual and high quality biological community. . largest marsh in Hamilton-Wentworth Region. . high diversity of biological communities and associated plants and animals (many rare species of plants, birds, herptiles, fish). . large area with many undisturbed sections. . important sanctuary for many species, particularly wetland species. . used for basic biological research by RBG, McMaster University and others. . high aesthetic value. Track addition along Harbour side may extend fill down slope with localized infilling along shoreline.	1. Identify significant resource elements during assessment of alternatives. 2. Minimize impacts through selection of preferred alternative. 3. Evaluate and mitigate impacts in discussion of preferred alternative.	6, 11	
WILDLIFE	Steep slopes along tracks/shoreline	Possible corridors for mammal/bird movement along shoreline/tracks (see Vegetation).	See comments under Vegetation	18	

* Environmentally Significant Issues

TABLE 2

CN BURLINGTON: HAMILTON JUNCTION TO BAYVIEW JUNCTION (SEE PLATE 3)

ENVIRONMENTAL ISSUES

FACTOR		LOCATION	DESCRIPTION	RECOMMENDATIONS	REFERENCE	DATA GAPS/LIMITATIONS
FISHERIES	*	Infilling of the harbour between Hamilton Junction and Bayview Junction	Area is shallow water habitat, of some significance to warmwater fish. This shoreline should provide a connecting link between Grindstone Creek and the shoreline further to the south for fishes spawning in Grindstone Creek (i.e. northern pike). It is the opinion of some that this function is not currently being fulfilled due to the absence of aquatic macrophytes along this shoreline and excessive silt levels.	Avoid infilling. If infilling is necessary attempt to enhance fish habitat by designing fill placement to replace shallow water habitat, and by planting macrophytes.	32	Factors presently limiting macrophyte growth along this shoreline are not known. No fish collections along this shoreline however species composition is probably similar to other areas where information is available.
LANDFILL SITES		None identified	No concerns.		14	
INDUSTRIAL/COMMERCIAL BUILDINGS			Rail corridor/parkland.	No concerns.		
HERITAGE	H30	Valley Inn Bridge	CN Rail Bridge - Additional deck required to accomodate extra tracks.	Bridge will remain following construction.	16	Heritage value unknown.
PARKS/RECREATION	P6	RBG Property west of CNR tracks (Rock Garden)	Ornamental Gardens.	Park property not affected. Potential noise mitigation (construction) to be assessed at detail design stage.	16	

* Environmentally Significant Issues

TABLE 3

CP HAMILTON ALTERNATIVE: MAIN STREET JUNCTION TO HAMILTON JUNCTION (PLATES 3 AND 4)

ENVIRONMENTAL ISSUES

FACTOR	LOCATION	DESCRIPTION	RECOMMENDATIONS	REFERENCE	DATA GAPS/LIMITATIONS
GEOLOGY/GEOMORPHOLOGY	Main Junction to Desjardins Canal (Plate 4)	R.O.W. borders slopes along Hamilton Cemetery. Erodible shales may be exposed by cuts or other construction activity.	Incorporate slope protection measures at detailed design stage.	2, 5, 6	
	Desjardins Canal to Hamilton Junction (Plate 3)	Slope cut/retaining wall required at bridge crossing, north side of canal. Erodible shales may be exposed.	As above. Side slope seepage should be monitored and addressed at detailed design stage if warranted.	2, 5, 6	
SOILS	As above	Soil materials variable in composition and erodibility. Some waste fill material may be encountered through Kay Drage Park (see Landfill Concerns). Groundwater seepage may contribute to erosion concerns.	Detailed soils testing required at detailed design stage. Erosion protection measures should be incorporated where warranted at detailed design stage.	2, 5, 6	
HYDROGEOLOGY	As above	Side hill seepage may be encountered. Artesian flows in some areas have been noted. Impact to groundwater quality/quantity depends on length and depth of cut requirements. Area is urbanized and not reliant on wells.	Seepage concerns will be addressed at detailed design stage.	2, 5	
SURFACE WATER QUALITY/QUANTITY	Chedoke Creek (Plate 4)	Not affected by track upgrading. Creek is rated poor for water quality and may be receiving leachate inputs from Kay Drage landfill.	No concerns.	2	
	Desjardins Canal (Plate 3)	Bridge upgrading, embankment cuts may cause sedimentation of canal. Existing water quality impaired by urbanization, high nutrient loadings, heavy metals in sediments.	Control of silt movement to canal to be addressed at detailed design stage.	2	
	Hamilton Harbour (Plate 3)	Track addition and fill will not affect harbour shoreline due to divergence from CN line. Water quality concerns limited to Desjardins Canal (above).	As above	2, 11, 19, 20	

* Environmentally Significant Issues

TABLE 3

CP HAMILTON ALTERNATIVE: MAIN STREET JUNCTION TO HAMILTON JUNCTION (PLATES 3 AND 4)

ENVIRONMENTAL ISSUES

FACTOR	LOCATION	DESCRIPTION	RECOMMENDATIONS	REFERENCE	DATA GAPS/LIMITATIONS
VEGETATION	1. Main Street to Hamilton Cemetery (Plate 4)	Units V-6 to V-13. Steep embankments with predominantly immature mixed hardwood cover; no significant species. Low to moderate botanical significance. May be affected by minor cuts/retaining wall installation in localized areas.	Include soil stabilization and slope revegetation procedures in mitigation measures at detailed design stage (where affected).	5, 13	
	2. Desjardins Canal to Hamilton Junction (Plate 3) a) West of CNR tracks	Local pockets of shrub succession in former disturbed areas; gentle to steep slopes; coniferous plantations on slopes below RBG Memorial Gardens.	No direct impact by undertaking.	5, 13	
	b) East of CNR tracks (Plate 3)	Units V-17, 18, 19. Wooded embankment, shores and emergent aquatic vegetation margin. These ensure slope stability and provide wildlife/fisheries habitat. Located in Hamilton-Wentworth ESA #16 (RBG-Cootes Paradise); no significant plant species.	Not affected by CP alternative if track added to north.	5, 13	
WILDLIFE	Steep slopes along tracks/shoreline	Possible corridors for mammal/bird movement along shoreline/paths (see Vegetation).	Slope habitat would not be affected by CP alternative if track added to north.	13, 18	
	Desjardins Canal Area (W12/W25 in ref. 18)	- Water/shore birds - Several species of reptiles and amphibians present - Small marsh - Within Hamilton-Wentworth ESA #16 (RBG-Cootes Paradise). (See Vegetation.)	Minimize filling and disturbance in detailed design stage through appropriate erosion mitigation.	18	

TABLE 3

CP HAMILTON ALTERNATIVE: MAIN STREET JUNCTION TO HAMILTON JUNCTION (PLATES 3 AND 4)

ENVIRONMENTAL ISSUES

FACTOR		LOCATION	DESCRIPTION	RECOMMENDATIONS	REFERENCE	DATA GAPS/LIMITATIONS
FISHERIES	*	Crossing of Desjardins Canal between Hamilton Harbour and Cootes Paradise. (Plate 3)	Extensive fish movement occurs through this connecting channel. Many of the warmwater species of the area undergo seasonal movements between Cootes Paradise and the Harbour. In addition rainbow trout which spawn in certain tributaries to Spencer Creek pass through this channel. The area in the vicinity of the canal is also a popular area for local anglers. There is a small area of emergent macrophytes immediately to the north of the connecting channel. This type of habitat is currently available in very few areas of the harbour, and provides nursery habitat for several fish species including bluegill sunfish and largemouth bass.	If bridge structure to be widened or replaced due to track requirements, appropriate slope protection/erosion control recommended. No barriers to fish migration should be constructed in the connection channel. Efforts should be made to minimize disruptions to fish migrations during construction. Angler access to the area should be maintained or enhanced.	30, 31, 33	
LANDFILL SITES	L3	Main and Dundurn (Plate 4)	Site closed in 1948. Currently site of Shopping Centre. MOE Site #41.	Extra track addition (minor cut/fill) should not affect former site.	14	
	L2	Hill St. Yard (Plate 4)	Site closed in 1929. Public works warehouse on site. MOE Site #28.	Not affected by undertaking.	14	
	* L1	Kay Drage Park (Plate 4)	Site closed in 1974. Capped with foundry sand. Handled domestic, commercial and industrial wastes. Liquid industrial wastes also suspected at site. MOE Site #31. Leachate content, water samples, magnetometer survey and air emission samples have been assessed in 1987 by Region and MOE. Ferrous metals buried in site. Leachate chemical content typical of landfills - no evidence of caustic content.	Other results and recommendations on file at MOE (Hamilton) office. Extra track, if required, would involve minor cuts/fills along landfill side. If landfill materials encountered, appropriate mitigation and approval under Section 45 of EPA may be required. Train station at site would require detailed testing and Section 45 approval.	14, 15	
	L4	Chatham St. near TH&B (Plate 4)	Site closed in 1930. 40 m from Stelco warehouse. MOE Site #29.	Not affected by either CP track addition to north or potential Aberdeen Yard expansion to south.	14	

* Environmentally Significant Issues

TABLE 3

CP HAMILTON ALTERNATIVE: MAIN STREET JUNCTION TO HAMILTON JUNCTION (PLATES 3 AND 4)

ENVIRONMENTAL ISSUES

FACTOR		LOCATION	DESCRIPTION	RECOMMENDATIONS	REFERENCE	DATA GAPS/LIMITATIONS
INDUSTRIAL/ COMMERCIAL BUILDINGS	B13	(Plate 4)	Supermarket, Shopping Centre (formerly Slater Steel Co. Ltd.)	Use data base to assess potential contaminant concerns at detailed design stage.		
ARCHAEOLOGY	* A2	Cholera Mass Grave Between Hwy. 403 & York Blvd., north of Desjardins Canal (Plate 3)	- Proximity to site of CP bridge upgrading/replacement. - Possibly more than one mass grave in area. - Possible disturbance of this site or unknown sites.	- Evaluation/mitigation at description of preferred alternative. - Address concerns in detailed design stage.	16	Actual layout of area poorly known.
	A1	Burlington Heights Ramparts (Plate 4)	- Archaeological significance from War of 1812 - Earth mounds.	No impact anticipated. Track work should occur below Heights.	16	As above.
HERITAGE	H22	Cathedral of Christ the King (Plate 4)	Possible disturbance of Heritage sites during construction (noise, dust, etc.).	Temporary impact. Address concerns if necessary in detailed design.	16	
	H23	Hamilton Cemetery (Plate 4)	Dates from C.1850. Former military encampment.	No impact anticipated.	16	
	H24	High Level Bridge (Plate 3)	Designated Heritage Site (MTC #36-23)	Not affected by undertaking.	16, 36	
	H25	TH&B Railway Bridge (Plate 3)	C.1880. No designation.	May be widened or replaced if extra track required.	16, 36, 37	
	H26	CNR Railway Bridge (Plate 3)	C.1880. No designation	Not affected by CP alternative.	16, 36, 37	
	H29	Desjardins Canal	See comments in following section (Parks/Recreation P4).	See comments in following section (Parks/Recreation P4).	16, 33	
PARKS/RECREATION	P2	Kay Drage Park Between Hwy. 403 and CPR tracks (including R.C. Diocese Park) (Plate 4)	Public park - Active recreational use (playing fields)	Recreational uses would not be affected by track additions, unless GO Station also constructed.	13, 17	
	P3	Hamilton Harbour Lookout York Blvd. between CNR tracks and High Level Bridge (Plate 3)	Royal Botanical Gardens. Public garden and lookout. Passive uses.	Not affected by CP alternative.	16	
	P4	Desjardins Canal Channel between Hamilton Harbour and Cootes Paradise	- Small boat access to Cootes Paradise - Possible disruption of activity during construction - Angling (see Fisheries section).	See comments under Water Quality, Wildlife, Fisheries.	16, 33	

* Environmentally Significant Issues

TABLE 4

CP HAMILTON ALTERNATIVE: QUEEN STREET TO MAIN STREET JUNCTION (PLATE 4) Page 1 of 1

ENVIRONMENTAL ISSUES/CONCEPTS

FACTOR	LOCATION	DESCRIPTION	RECOMMENDATIONS	REFERENCE	DATA GAPS/LIMITATIONS
GEOLOGY/GEOMORPHOLOGY	Queen St. to Main St. (depressed track)	No concerns.		2	
SOILS	As above	Slope soils are susceptible to disturbance if extra track requires slope cut.	Include slope protection and soil stabilization measures at detailed design stage where warranted.	2	
HYDROGEOLOGY	As above	No concerns. Grade already depressed. Area urbanized and on municipal services.	If seepage encountered, appropriate mitigation should be incorporated at detailed design stage.	2, 5	
SURFACE WATER QUALITY/QUANTITY	No surface water features present	No concerns.		2, 5	
VEGETATION	Queen St. to Main St. (depressed track)	Units V-4, V-5. Steep embankments along TH&B rail line, with immature Manitoba Maple and shrub cover; no significant species.	Include soil stabilization and slope revegetation procedures in mitigation measures at detailed design stage (where affected).	5, 13	
LANDFILL SITES	None identified.	No concerns.		14	
HERITAGE	Queen St. to Main St. Junction H12-H21	Buildings along Canada St. bordering tracks. #13, 20, 23, 24, 27, 49, 64, 139, 148, 155.	Sites with local historical/ architectural value but not designated. No direct impact by CP alternative.	36	
PARKS/RECREATION	No parks identified.	No concerns.		16	
INDUSTRIAL/COMMERCIAL BUILDINGS	B10 B11 B12	Bicycle Repair Shop Dundurn Builder's Supply Auto Service	Use data base to assess potential contaminant concerns at detailed design stage.		

TABLE 5

CP HAMILTON ALTERNATIVE: HUNTER ST. TUNNEL TO VICTORIA AVENUE YARD (PLATE 4)

ENVIRONMENTAL ISSUES

FACTOR	LOCATION	DESCRIPTION	RECOMMENDATIONS	REFERENCE	DATA GAPS/LIMITATIONS
GEOLOGY/GEOMORPHOLOGY	Tunnel Site to Yard	Track may be reinstated on former track bed.	No concerns.		
SOILS	As above	As above.	As above.		
HYDROGEOLOGY	As above	No concerns Area is urbanized.	If seepage encountered, employ suitable control measures at detailed design stage.		
SURFACE WATER QUALITY/QUANTITY	As above.	No concerns		2	
VEGETATION	Victoria Avenue Yard	Current yard borders Manitoba maple-aspen embankment succession (V-3) which is low in quality.	No expansion of yard proposed. No impacts anticipated.	13, 40	
FISHERIES	As above	No fisheries impacts.	No concerns.		
LANDFILL SITES	None identified	No concerns		14	
INDUSTRIAL/COMMERCIAL BUILDINGS	B1	Warehouse Distribution and Woodworking Co.	Use data base to assess potential contaminant concerns.		
	B2	Fire Ruins			
	B3	City Plywoods			
	B4	CP/TH&B Railway Yard			
	B5	Canadian Refractories Ltd. (Insulation)			
	B6	Canadian Westinghouse			
	B7	School			
	[redacted]	Gerrard Co. Ltd. (Wire Tying Machinery)			
	B9	Weaver Coal Co.			

* Environmentally Significant Issues

TABLE 5

CP HAMILTON ALTERNATIVE: HUNTER ST. TUNNEL TO VICTORIA AVENUE YARD (PLATE 4)

ENVIRONMENTAL ISSUES

FACTOR		LOCATION	DESCRIPTION	RECOMMENDATIONS	REFERENCE	DATA GAPS/LIMITATIONS
HERITAGE	H1	Brick Apartments	Canadian Inventory of Historic Buildings (1973)	No direct effect.	16	
	H2	TH&B Station	LACAC/ACO "Historic/Architectural Merit". Landmark Building.	Potential upgrading for future GO Station. Discussed in preferred alternative stage.	16, 37	
	H3	Limestone House	LACAC "Considerable Architectural Merit"	No direct effect. No tunnel reconstruction anticipated.	16, 36	
	H4	McNab Street Presbyterian Church	LACAC/ACO "Considerable Architectural Merit" - Designated under Ontario Heritage Act (1974) August 1987	As above.	16, 36, 37	
	H5	McNab Street Church Manse	LACAC/ACO "Considerable Architectural Merit"	As above.	16, 36, 37	
	H6	Birely House	LACAC "Architectural Merit"	As above.	16, 36, 37	
	H7	Central Public School	LACAC "Historic and Architectural Merit". Designated January 1978. Landmark Building.	As above.	16, 36, 37	
	H8	St. Marks Anglican Church	Not designated.	As above.	16, 36, 37	
	H9	CHCH Television	Not designated.	As above.	16, 36, 37	
	H10	Brick House	LACAC "Architectural Merit"	As above.	16, 36, 37	
	H11	Brick Row	LACAC "Historic and Architectural Merit"	As above. Secondary impacts (dust, etc.) should be addressed where necessary at detailed design stage.	16, 36, 37	
PARKS/RECREATION	P1	Mountain Face Park Adjacent to TH&B and CN tracks from Wentworth St. to Kenilworth Ave.	- Public park. - Escarpment Natural Area (Niagara Escarpment Plan).	Not affected by alternative.	17	

* Environmentally Significant Issues

TABLE 6

CN HAMILTON ALTERNATIVE: CN STATION TO HAMILTON JUNCTION (PLATES 3 AND 4)

ENVIRONMENTAL ISSUES

FACTOR	LOCATION	DESCRIPTION	RECOMMENDATIONS	REFERENCE	DATA GAPS/LIMITATIONS
GEOLOGY/GEOMORPHOLOGY	1. CN Station to CN Yards (Plate 4)	Urban/industrial setting. No steep slope sections. Track widening should be accommodated within available R.O.W. area. Subsurface deposits characterized by granular material, overlying dense sand, silty clay till, and shale bedrock. Groundwater may be encountered at sand/clay interface.	Geotechnical concerns would be addressed at detailed design stage.	2, 5	
	2. CN Yard to Hamilton Junction (Plates 3 and 4)	Subsurface deposits similar to above. Existing tracks bordered along west side by steep embankment. Track addition may require slope cuts in addition to fills. If bridge alteration required at Desjardins Canal, additional slope disturbance may occur.	Geotechnical studies and slope protection measures would be required at detailed design stage.	2, 5	
SOILS	CN Station to Hamilton Junction	Typical sequence characterized as fill (1-2 m) overlying sand, silty sand, occasional gravel/silty clay (2-9 m), silty clay to silty clay fill (3-13 m) and shale bedrock. Erodibility variable depending on depth of cuts, level of disturbance during fill operations, etc. Wet seams may be encountered in cuts leading to additional erosion.	Soil stabilization and slope protection measures would be incorporated at the detailed design stage. Detailed soils testing would be conducted throughout construction zone.	2, 5	
HYDROGEOLOGY	CN Station to Hamilton Junction	Groundwater elevation variable, but typically encountered at sand/clay interface. May be encountered anywhere from 2-10 metres below surface. Area is urbanized and connected to municipal water supply. Concerns relate to interception of groundwater and resultant erosion.	Suitable mitigation to reduce water erosion during and following construction would be incorporated at detailed design stage.	2, 5	Hydrogeology data incomplete.

* Environmentally Significant Issues

TABLE 6

CN HAMILTON ALTERNATIVE: CN STATION TO HAMILTON JUNCTION (PLATES 3 AND 4)

ENVIRONMENTAL ISSUES

FACTOR	LOCATION	DESCRIPTION	RECOMMENDATIONS	REFERENCE	DATA GAPS/LIMITATIONS
SURFACE WATER QUALITY/QUANTITY	CN Station to Hamilton Junction (Plates 3 and 4)	No stream channels affected. Bridge alterations at Desjardins Canal, if required may result in sediment release to canal. Shoreline fill may extend out to 5 metres at localized sites north of canal to accomodate extra tracks. Embankment fill may also impact shoreline edge in localized places extending to CN Yard.	Control of silt movement to canal, runoff, dust would be addressed at detailed design stage. Use of clean fill should be stipulated. Control of fill placement and sediment disturbance would be addressed at detailed design stage. (Fisheries concerns highlighted in separate section).	2, 11, 19, 20	
VEGETATION	1. CN Station to CN Yards (Plate 4)	Street and shade tree plantings of mixed deciduous species, 10-90 cm diameter.	Appropriate mitigation would be addressed at detailed design stage.	25	
	2. CN Yards to Desjardins Canal				
	a) Harbour edge (Plate 4)	Unit V-14. Weedy species along shoreline; localized emergent aquatic species; potential fisheries habitat.	Maintain or enhance habitat through appropriate mitigation where required.	25	
	b) Slopes below Dundurn Castle and Harvey Park	Mature mixed hardwoods on steep slopes with predominant cover by introduced species; providing slope stability and wildlife habitat (Units V-15, V-16).	Employ slope stabilization and revegetation where affected.	25	
	3. Desjardins Canal to Hamilton Junction a) West of CNR tracks (Plate 3)	Local pockets of shrub succession in former disturbed areas; gentle to steep slopes; coniferous plantations on slopes below RBG Memorial Gardens.	Include soils stabilization and slope revegetation procedures in mitigation measures at detailed design stage (where affected).	13, 25	
	b) East of CNR tracks (Plate 3)	Units V-17, 18, 19. Wooded embankment, shores and emergent aquatic vegetation margin. These ensure slope stability and provide wildlife/fisheries habitat. Located in Hamilton-Wentworth ESA #16 (RBG-Cootes Paradise); no significant plant species.	Track addition along harbour side would result in localized railway fill impacts along slopes. Use of clean, non-erodible fill and aopropriate stabilization measures will be recommended.	13, 25	

* Environmentally Significant Issues

TABLE 6

CN HAMILTON ALTERNATIVE: CN STATION TO HAMILTON JUNCTION (PLATES 3 AND 4)

ENVIRONMENTAL ISSUES

FACTOR		LOCATION	DESCRIPTION	RECOMMENDATIONS	REFERENCE	DATA GAPS/LIMITATIONS
ENVIRONMENTALLY SENSITIVE AREAS	*	Hamilton Harbour (Plate 3)	RBG-Cootes Paradise ESA #16. See Table 2 for description.	See Table 2 for recommendations.	6, 11	
WILDLIFE		CN Yards to Desjardins Canal	Possible corridors for mammal/bird movement along shoreline/park slopes (see Vegetation).	Stabilize and revegetate where affected.	18	Lack of detailed knowledge of wildlife movement along shoreline.
FISHERIES	*	CN Yard to Hamilton Junction Harbour shoreline and canal joining Cootes Paradise and Hamilton Harbour (Plates 3 and 4)	Extensive fish movement occurs through this connecting channel. Many of the warmwater species of the area undergo seasonal movements between Cootes Paradise and the harbour. In addition rainbow trout which spawn in certain tributaries to Spencer Creek pass through this channel. The area in the vicinity of the canal is also a popular area for local anglers. There is a small area of emergent macrophytes immediately to the north of the connecting channel. This type of habitat is currently available in very few areas of the harbour. This area provides nursery habitat for several fish species including bluegill sunfish and largemouth bass. South of the channel connecting Cootes Paradise and the harbour there is a narrow band of shallow-water habitat. This narrow band supports adult largemouth and smallmouth bass. Some of this shoreline has extensive macrophyte growth (29-90% cover). This is important habitat for warmwater game fish.	No barriers to fish migration should be constructed in the connecting channel. Efforts should be made to minimize disruptions to fish migrations during construction. Angler access to the area should be maintained or enhanced. Infilling of shallow water habitats along the harbour north of the canal should be minimized. If infilling is necessary, efforts should be made to enhance fish habitat as a result. Possible techniques include the addition of gravel substrates and/or the planting of macrophytes. Avoid infilling of the shoreline south of the canal and the loss of fish habitat. If infilling is undertaken it would be possible to extend the fill operation to recreate this habitat but it would be expensive, given the rapid drop-off along this section of the harbour. NOTE: The section of harbour shoreline bordering the CN Yard facility is a productive littoral area for warmwater fish species (Plate 4).	32	
LANDFILLS		CN Station to Hamilton Junction	None identified.	No concerns.	14	

* Environmentally Significant Issues

TABLE 6

CN HAMILTON ALTERNATIVE: CN STATION TO HAMILTON JUNCTION (PLATES 3 AND 4)

ENVIRONMENTAL ISSUES

FACTOR		LOCATION	DESCRIPTION	RECOMMENDATIONS	REFERENCE	DATA GAPS/LIMITATIONS
INDUSTRIAL/COMMERCIAL BUILDINGS		B14	Acorn Lumber Co. (1964)	Use data base to assess potential contaminant concerns related to current and former land uses in proximity to construction zone.		
		B15	CNR Yard (1964), formerly Canada Iron Foundries (1947)			
		B16	Steel Company of Canada Ltd. (1947)			
ARCHAEOLOGY	A3	Burlington Heights between CNR tracks and York Road, south of Desjardins Canal	Archaeological significance from War of 1812.	Located above CN R.O.W. Would not be affected by track addition.	16	
HERITAGE	H27	1. CN Station	L.A.C.A.C. "Architectural Merit" Landmark Building.	Station alterations, if required, would be addressed at detailed design stage.	16, 37	
	H29	2. Desjardins Canal	Possible disturbance (sedimentation) during construction.	See comments in Fisheries section above.	16, 32	
	H28	3. Hamilton Custom House	L.A.C.A.C. "Historical and Architectural Merit"	Not directly affected. Address potential secondary effects (dust, etc.) at detailed design.	16, 37	
PARKS/RECREATION	P5	Harvey Park/Dundurn Park on Hamilton Bay adjacent to CN tracks	Public park and lookout. Located above CN tracks.	No direct impact from undertaking.	16, 17	

* Environmentally Significant Issues

2.3 Summary - Environmentally Significant Issues

During the biophysical inventory and evaluation significant resource eatures were identified which are sensitive to environmental impacts and hich warrant specific mitigation during the undertaking. These features re highlighted in point form below.

CN Burlington Segment: Waterdown Road - Sassafras Woods ESA #4 (Plate 2

- Proposed GO Train Waterdown Station to be located at southeast corner of Highway 403 and Waterdown Road, south of ESA.
- Impact to western edge and southwest corner of ESA if potential north service road extension constructed to Waterdown Road.

N Burlington Segment: Grindstone Creek - Hidden Valley Road (Plate 2

- Undertaking requires bridge expansion at creek crossing, culvert extension, and addition of railway fill along valley section.
- Construction disturbance may result in siltation at crossing and downstream.
- Site is part of Grindstone Creek ESA #3.
- Creek section downstream of crossing (Hidden Valley Park) provides spawning and nursery habitat for trout.
- Seasonal constraints - spring (rainbow trout) and fall (brown trout) spawning in area.

CN Burlington Segment: Grindstone Creek Valley - Old York Road to Plains Road (Plate 3)

- Track upgrading requires addition of railway fills and culvert upgrading at ravine sites where tributaries feed Grindstone Creek to south.
- Site is part of Grindstone Creek ESA #3.
- Mature oak ravine forest habitat (units V-29, 30, 33, 35, 36) is high in quality and sensitivity and supports several significant vegetation species (see Appendix B).

CN Burlington Segment: Royal Botanical Gardens - Cootes Paradise ESA #16 - Plains Road to Desjardins Canal (Plate 3)

- Area of greatest potential railway fill impacts due to steep slopes and proximity to surface water features which support a variety of fish and wildlife species (Hamilton Harbour, Old Cootes Paradise outlet, Sunfish Pond).
- Depending on selected alternative and number of tracks added, railway fills could extend into portions of Sunfish Pond (part of Grindstone Creek ESA #3), Old Cootes Paradise Outlet, and Hamilton Harbour, and could remove extensive areas of slope vegetation (V-19) along the Hamilton Harbour shoreline.
- Area also contains a variety of heritage, garden and parkland sites associated with the Royal Botanical Gardens (rock gardens [P6], memorial gardens, Valley Inn bridge [H30], Valley Inn Park [P7], and cholera graves [A2]).

CP Segment: Desjardins Canal to Victoria Avenue Yard (Plates 3, 4,

Desjardins Canal (Plate 3)

- Heritage site (H29), provides extensive fish movement between harbour and Cootes Paradise, part of RBG-Cootes Paradise ESA #16.
- Upgrading/Replacement of CP bridge could cause channel siltation.
- Proximity to cholera mass grave (A2) - actual layout of site not well known.

Kay Drage Park (Plate 4)

- Public park (P2) supporting active recreational uses, sports fields.
- Rehabilitated landfill site (1974). Domestic, commercial and industrial wastes - liquid industrial wastes also suspected at site. Capped with foundry sand. Potentially sensitive area.
- If GO Train station located at site would require approval under Section 45 of EPA.
- Extra track, if required, would involve minor cuts/fills along landfill site. Would require EPA approval if landfill materials uncovered.

CN Hamilton Segment: Desjardins Canal to CN Station (Plates 3, 4)

Desjardins Canal (Plate 3)

- See comments under CP, above
- Upgrading/replacement of CN bridge could cause channel siltation, impairment of fish habitat and movements.

Hamilton Harbour Shoreline - Desjardins Canal to CN Yard (Plates 3, 4)

- Part of RBG-Cootes Paradise ESA #16.
- Shoreline habitat provides corridor for movement of wildlife and fish.
- Section of harbour shoreline bordering CN yard facility is a productive littoral area for warmwater fish species.

3.0 EVALUATION OF ALTERNATIVES

3.1 CN Burlington Corridor - Burlington Station to Desjardins Canal

Within this section the existing CN rail corridor is the only available route. The addition of at least one extra track to the north or south of the existing tracks in the CN Rail right-of-way would be required for an increase in the level of GO Train service. However, a shift of the existing GO Train service to the CP corridor in Hamilton from the CN corridor would have no impact on the CN Burlington section. A comparison of the relative environmental impacts associated with a north versus south track addition for improved GO Train service is provided below.

3.1.1 Burlington Station to Old York Road (Plates 1-3)

In this section the primary environmental issues are the construction of the GO Train station and related facilities (interchanges, parking, potential north service road extension/Sassafras Woods ESA #4) at Waterdown Road and the crossing of Grindstone Creek at Hidden Valley Road (Plate 2).

A review of the detailed engineering plans indicates that impacts are comparable and mitigatable with either a north or south track addition. Consequently there is no environmental preference for a north or south track in this section. Other factors will determine whether a north or south alignment is selected.

3.1.2 Old York Road to Plains Road (Plate 3)

Within this section the main environmental issue is the impact of additional track construction on the high quality mature oak ravine forests and associated tributaries which feed Grindstone Creek to the south (Units V-29, 30, 33, 35, 36).

Although cut, fill and culvert upgrade requirements for a north versus south track addition are comparable in this section, a track addition to the north would be preferable to reduce impacts (siltation, erosion) to the tributary valleys and ultimately Grindstone Creek to the south of the existing right-of-way. A north preference has also been indicated by staff of the Halton Region Conservation Authority (letter of May 10, 1988; Appendix B) in this segment. However, an expansion to the south, if required, could be accomodated with appropriate mitigation measures.

3.1.3 Plains Road to Desjardins Canal (RBG-Cootes Paradise ESA #16, Grindstone Creek ESA #3) (Plate 3)

Within this section the relative impacts of additional track construction to the north or south are highlighted below:

North Track

Impacts:

- Railway fill impact to embankment mixed hardwood succession (V-26) and shoreline edge at east end of Old Cootes Paradise Outlet.
- Impact to embankment hardwood succession (V-19) for approximately 225 m near Valley Inn Road due to railway fill.
- Minor cuts along sumac-aspen succession (slopes) to south of Valley Inn Road.

Implications:

- Vegetation and wildlife impacts localized.
- Fisheries impacts limited to potential habitat alteration at Old Cootes Paradise outlet shoreline.

South Track

Impacts:

- Railway fill impact to embankment vegetation and shoreline of Sunfish Pond (units V-19, portion of V-21).
- Railway fill impact to at least 720 m of embankment vegetation (V-19) extending from Valley Inn Road south to the Desjardins Canal.

Implications:

- Extensive embankment vegetation disturbance may disrupt wildlife corridor activities along harbour shoreline in short and long term.
- Potential for loss of shoreline habitat (slope base and littoral zone) in localized areas due to fill slippage.
- Harbour shoreline is part of ESA #16 and may be the site of future habitat improvement work as part of Hamilton Harbour Remedial Action Plan. Disturbance related to south track addition may conflict with this objective.

Conclusions

On the basis of the above a track addition to the north (403) side would be environmentally preferable. However, an expansion to the south, if required, could be accommodated with appropriate mitigation measures.

3.2 Evaluation - CN versus CP Alternative - Desjardins Canal to Hamilton Station (Plates 3 and 4)

The relative environmental impacts associated with the CN/CP alternatives in the Hamilton section of the study area are dependent on the number of additional tracks required for each alternative.

At an intermediate level of improved GO Train service the existing CP right-of-way could handle the introduction of GO Trains and a further modest increase beyond current train levels without requiring an additional track. Although track improvements and switching adjustments would be required, the environmental impact would be minimal. In contrast, any increase in the number of GO trains above current levels would probably require one additional track on the CN section of the line which borders the Hamilton Harbour Shoreline (part of RBG-Cootes Paradise ESA #16). The proposed Perimeter Road alignment is also located in this area. From a natural-historic environment viewpoint, a CP alternative would be preferred.

A higher intermediate level of GO Train service would likely require the following track additions for both of the alternatives:

CP:
- one additional track from the Desjardins Canal to the Hunter Street tunnel.
- no additional Track in the tunnel or beyond the tunnel if GO Train service remains in the 6-20 daily train range.
- possible upgrading of the existing Victoria Avenue yard for overnight GO Train storage.

CN:
- one additional track from the Desjardin Canal to the CN yard along the Hamilton Harbour shoreline.
- possible upgrading and expansion of the CN yard for overnight storage.

The introduction of "full" GO Train service to Hamilton would require the introduction of a second new CN track in Burlington as well as in Hamilton, or if on the CP route in Hamilton the reconstruction of the Hunter Street Tunnel for two tracks. Such an undertaking is beyond the scope of the current study and would be subject to a separate study and report if and when proposed.

Table 7 provides a summary environmental impact evaluation of the CN and CP alternatives under the intermediate level of GO Train service highlighted above.

As indicated in Table 7 the CP alternative is favoured slightly in terms of impacts to water quality, fisheries, wildlife and ESAs. There is no clear preference for either alternative in terms of heritage, vegetation impacts or industrial/commercial site uses. In terms of landfill sites the CN alternative is favoured slightly because no landfill concerns have been identified.

Overall there is a slight preference for the CP alternative because it does not affect the Hamilton Harbour shoreline environment which is the most significant resource feature in the area due to its fisheries potential, ESA status, and wildlife habitat (corridor) attributes. The CN alternative may not directly affect the harbour shoreline. However, a combination of track addition and yard upgrading adjacent to the shoreline, coupled with the proposed construction of the Perimeter Road in this area may result in secondary impacts which are difficult to predict at present.

Table 7. Environmental Evaluation of the CP and CN Alternatives - Desjardins Canal to Hamilton Station

Environmental Factor	CP Alternative	CN Alternative	Preference
Water Quality/ Fisheries	Concerns limited to CP bridge upgrading at Desjardins Canal (erosion, siltation).	Similar concerns at Desjardins Canal. Harbour section bordering CN Yard is productive littoral zone for warmwater fish. Track addition/yard upgrading alone should not affect harbour shoreline, but may influence Perimeter Road routing through area. Potential impacts have not been determined due to lack of additional information (CN requirements).	CP (slight)
Vegetation	Vegetation units low-moderate quality. Impacts restricted to localized cuts/fills; few units affected.	Disturbed harbour shore vegetation low in botanical quality.	None
Wildlife	Impact minimal due to urban nature of site and limited vegetation impact.	Shoreline impacts dependent on CN track requirements and Perimeter Road alignment.	CP (slight)
ESAs	No effect on RBG-Cootes Paradise ESA #16 resource features other than potential canal impacts during bridge upgrading.	See comments above.	CP (slight)
Landfills	Track addition along Kay Drage site may encounter landfill materials, could require EPA approval.	No concerns identified.	CN
Heritage Features	CP TH&B Station would be upgraded or reconstructed to function as an intermodal transit terminal. Station is currently a landmark building with historical/architectural merit.	CN Station could continue its present function. Future upgrading could be required. Also considered a landmark building with architectural merit.	None
Industrial/ Commercial Buildings	No site re-use concerns identified at present other than track work along Kay Drage Site (see above). Inventory of existing and former site use in vicinity of R.O.W. provided as general database.	No site re-use concerns identified at present. Inventory of existing and former site use in vicinity of R.O.W. provided as general database.	None

3.4 Recommended Alternative

Based on an analysis of the social, environmental and technical engineering aspects of the GO Train expansion alternatives the Study Team has recommended the following:

FINAL TECHNICAL RECOMMENDATIONS

- THE IMPLEMENTATION OF THE RECOMMENDATIONS WILL REQUIRE APPROVAL UNDER THE ENVIRONMENTAL ASSESSMENT ACT. CONSTRUCTION WILL TAKE PLACE IN THE CONTEXT OF OVERALL TRANSPORTATION REQUIREMENTS AND THE AVAILABILITY OF FUNDING AT THAT TIME.

1. ROUTE
   - SHIFT THE EXISTING GO TRAIN SERVICE IN HAMILTON FROM THE CN RAIL OAKVILLE SUBDIVISION TO THE CP RAIL TORONTO CONNECTION AND WATERFORD SUBDIVISION, TERMINATING AT THE CP/TH&B HUNTER STREET STATION.
2. LEVEL OF SERVICE
   - PROVIDE INCREMENTAL IMPROVEMENTS IN TRAIN SERVICE AS APPROPRIATE AND AS REQUIRED BY DEMAND UP TO THE LEVEL OF SERVICE THAT CAN BE ACCOMMODATED BY THE EXISTING HUNTER STREET TUNNEL. (THE EXISTING TUNNEL CAN ACCOMMODATE SIGNIFICANT SERVICE UPGRADING WITHOUT THE NEED FOR RECONSTRUCTION).
   - INTEGRATE GO BUS AND GO TRAIN SCHEDULES TO PROVIDE FULL GO SERVICE THROUGHOUT THE DAY IN THE HAMILTON-TORONTO CORRIDOR.
3. STATIONS

   CP/TH&B STATION
   - TRANSFER THE FUNCTIONS OF THE EXISTING HAMILTON BUS TERMINAL TO THE CP/TH&B HUNTER STREET STATION, WHICH WOULD OPERATE AS AN INTERMODAL TRANSIT TERMINAL.

   WATERDOWN ROAD STATION
   - PROVIDE GO STATION FACILITIES IN THE BLOCK BOUNDED BY WATERDOWN ROAD, HIGHWAY 403, CN RAIL ALDERSHOT YARD PROPERTY AND CN RAIL OAKVILLE SUBDIVISION.

The proposed interchange providing access to the future Waterdown Road Station will be located on the south side of Highway 403 and will therefore have no impact on Sassafras Woods ESA #4.

To implement the recommendations, an initial increase in train service would require the construction of an additional CN track between Burlington Station and Hamilton Junction, while an increase to the level accommodated by the Hunter Street tunnel would require the further addition of a track to the CP line from the Desjardins Canal to the Hunter Street tunnel.

The recommended route alternative, GO Train stations, and storage yard are highlighted in Figure 2.

4.0 RECOMMENDED ALTERNATIVE - ENVIRONMENTAL IMPACT MITIGATION

General environmental impact mitigation recommendations for the route alternatives have been presented in Tables 1-6. The following section identifies specific mitigation measures to minimize environmental impact along the recommended alternative. Mitigation measures addressing the complete recommended level of service (1 additional CN track in Burlington, and 1 additional CP track between Hamilton Junction and the Hunter Street tunnel west portal) are provided.

The impact and mitigation assessment is highlighted from the Burlington Station to the Hamilton terminus by route section as provided below.

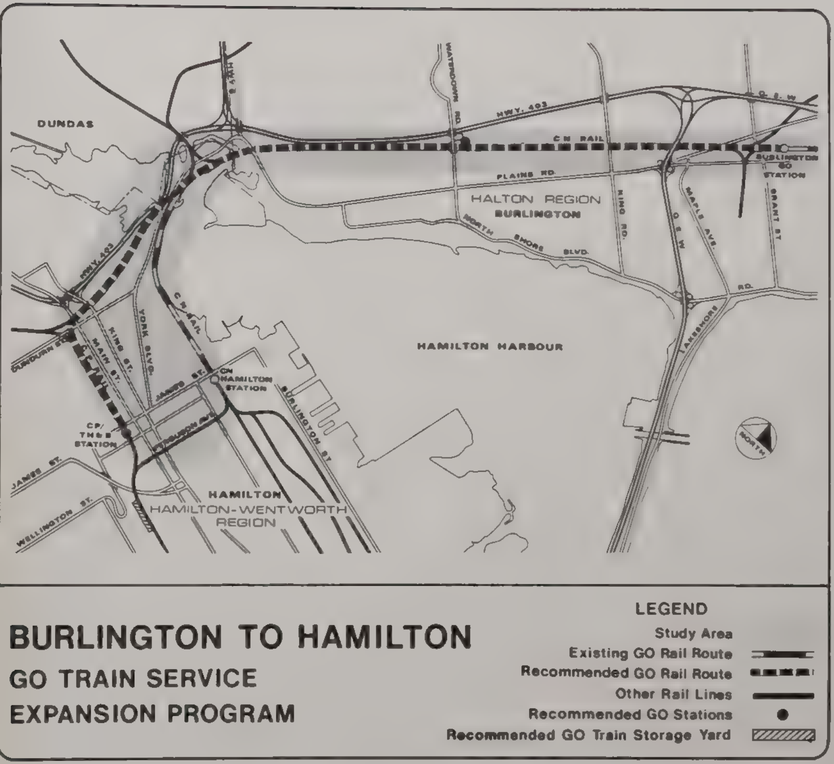

FIGURE 2

Recommended Alternative

CN: Burlington Station to Waterdown Road (Plates 1 and 2)

Environmental Issue	Activity/Impact	Mitigation
Surface Water	Culvert upgrading at Rambo, Hager, Indian, and Falcon Creeks	Standard MTO erosion/sedimentation control and bank/channel restoration where required.
	Grindstone Creek tributary at proposed Waterdown Station (vegetation units V-29, V-50)	Maintain creek in open channel state to greatest extent possible. Provide options to minimize sediment/salt inputs at detail design. Present Authority policy requires that under Regional (Hurricane Hazel) Storm conditions water levels in day time parking areas should not exceed 0.43 metres in flood depth to protect vehicles and other property. Appropriate storm water controls will be required to achieve this objective.
Archaeology	Archaeology site A4 (Indian Creek)	Located north of CNR R.O.W. and should not be affected by track work which is restricted to R.O.W. (culverts, ditching, minor fill). Surface collections have been previously made at site and recorded with MCC. Report additional finds to MCC if encountered during track work.
Vegetation	Clearing for Waterdown Station	Maintain portion of unit V-50 (mature maple ravine forest) if possible as buffer/screening/wildlife link along 403.
Wildlife	Wetland, forest, pond habitat linkage to east of proposed Waterdown Station, north of Aldershot Yard	Units V-52 to V-73. Support diverse wildlife assemblage. Maintain wetland complex if feasible as component of future design options.

CN: Waterdown Road to Plains Road (Plates 2 and 3)

Environmental Issue	Activity/Impact	Mitigation
Surface Water/ Fisheries	Culvert/bridge upgrading at Hidden Valley Road crossing, Grindstone Creek (ESA #3)	Incorporate state of the art erosion/sedimentation control in detailed plans. Schedule all in-stream construction between June 1 and August 31 to avoid interference with migratory salmon and trout runs in spring and fall.
	Culvert upgrading, fills at crossing of Grindstone Creek tributaries between Old York Road and Plains Road (ESA #3)	Incorporate measures as above.
Vegetation	High quality oak ravine forest habitat along R.O.W. with many significant plant species (units V-29, 30, 33, 35, 36; Old York Road to Plains Road)	Snowfence construction limits to prevent off-R.O.W. incursion. Incorporate measures to stabilize fill in detailed plans to prevent fill movement into ravines. Snowfence driplines of high quality trees if located in proximity to construction area. Assess construction area for significant plants; mark and salvage if feasible.
Wildlife	See above sites	Mitigation cited above will minimize adverse impacts to wildlife and wildlife habitat.

CN/CP: Plains Road to Desjardins Canal (RBG-Cootes Paradise ESA #16, Grindstone Creek ESA #3) (Plate 3)

Environmental Issue	Activity/Impact	Mitigation
Surface Water/ Fisheries	Potential railway embankment fill into Sunfish Pond.	Use clean, non-erodible fill. If pond infilling required, design fill to create littoral zone habitat. Keep culvert between both ponds clear to allow fish passage.
	Hamilton Harbour Shoreline. Potential for localized shoreline infilling if north and south tracks added prior to switch to CP	Use clean, non-erodible fill. Stabilize embankment fill to prevent slippage. If infilling required, create littoral zone habitat as above.
Heritage	Valley Inn Bridge (H30)	Extra deck to be added. Bridge will remain following upgrading.
Parks/Recreation	RGB rock garden (P6), Valley Inn Park (P7), Pedestrian Bridge (P8)	No direct impact. Indirect effects (noise, dust, etc.) during construction to be addressed where required in detailed design.
Vegetation	Mature oak ravine forest (V-23, V-24, V-25) (High quality)	Not directly affected. If chinquapin oak present near work area, protect with fencing around dripline.
	Other units (V-17, 18, 19, 20) (low-moderate quality)	Incorporate slope restoration (revegetation) measures where required in detailed design.
Wildlife	Sunfish Pond - shoreline infilling when track added	Conduct pre-construction survey for Eastern Spiny Softshell turtle basking/nesting sites along shoreline. Incorporate findings in detailed fill design to promote/protect turtle nesting habitat.
	Harbour embankment/shoreline (V-17, 18, 19)	Measures to stabilize fill and re-vegetate disturbed areas will promote wildlife use.

CP: Desjardins Canal to Victoria Avenue Yard (Plates 3 and 4)

Environmental Issue	Activity/Impact	Mitigation
Surface Water/ Fisheries	CPR bridge widening or replacement across Desjardins Canal. Associated slope cuts/ retaining wall installations. (If extra track required)	Incorporate slope stabilization, erosion control measures in detailed design to prevent sediment movement to canal. Avoid instream blockage of fish movements by construction activities. Install sediment control along canal banks to protect watercourse during construction.
Heritage	Mass cholera grave (A2) Proximity to CPR bridge	Assess site location relative to bridge work. Conduct pre-construction test digs - notify Ministry of Culture and Communications if archaeology material noted.
	CP TH&B bridge (H25) widening or replacement for additional track	No heritage designation. Historic interest. Address status in detailed design.
	Desjardins Canal (H29)	See Surface Water/Fisheries above.
	Cathedral of Christ the King (H22)	Address secondary concerns (dust, vibration) if any at detailed design.
	Canada Street buildings bordering R.O.W. (H12-H21)	No direct impact if track added. Address secondary concerns (noise, dust) at detailed design stage.
	CP/TH&B Station upgrading (H2) LACAC Historical/Architectural Merit - Landmark Building	Assess heritage value in proposed upgrading at detailed design stage.
Landfills	Kay Drage Park (L1) Borders CP R.O.W.	If track addition encounters landfill materials, approval under EPA Section 45 will be required.
Vegetation	Units V-4 to V-13 Low to moderate quality vegetation, no significant plant species.	Incorporate appropriate slope stabilization and re-vegetation in detailed design as required.
	Unit V-3 (Manitoba Maple-aspen embankment succession) bordering Victoria Avenue Yard	Low quality vegetation unit. Incorporate appropriate slope stabilization/re-vegetation in detailed design as required.
Wildlife	Wildlife impacts minimal due to urban nature of area and minimal vegetation impact.	No specific mitigation other than measures cited above.
Parks/Recreation	Kay Drage Park (P2) Borders CP R.O.W.	Undertaking will not affect active recreational use of park.
	Mountain Face Park (P1) (Niagara Escarpment)	Undertaking will not affect recreational use of park.

KEY FOR SITES MAPPED ON ACCOMPANYING PLATES 1-4.

Code	Site/Unit	Plate
V - Vegetation	(▨ High Botanical Quality) (☐ Low-Med Botanical Quality)	
V1	Mature Sugar Maple Escarpment Forest	1
V2	Immature Manitoba Maple Bottomland	1
V3 V4 V5 V6 V7 V8	Manitoba Maple-Aspen Succession (Embankments)	1
V9	Mature Oak Ravine Forest	1
V10	Mature Parkland (Cemetery)	1
V11	Mature Oak Forest	1
V12 V13	Sumac-Aspen Succession (Embankment)	1, 2
V14	Disturbed Harbour Shore	1, 2
V15 V16	Mature Mixed Ravine Forest (Disturbed)	1, 2
V17	Cattail Marsh	2
V18	Willow-Manitoba Maple Sandbar Succession	2
V19	Manitoba Maple-Willow-Aspen-Sumac-Ash Succession (Embankment)	2
V20	Immature Parkland (Interpretive Display)	2
V21	Cattail Marsh	2
V22	Immature Parkland (R.B.G. Rock Garden)	2
V23 V24 V25	Mature Oak Ravine Forest	2
V26	Immature Mixed Hardwood Succession (Elm, Ash) (Embankment)	2
V27	Loosestrife-Cattail	2
V28	Mature Parkland (R.B.G. Spring Garden)	2
V29 V30	Mature Oak Ravine Forest	2
V31 V32	Mature Parkland (Cemeteries)	2
V33	Mature Oak Ravine Forest	2
V34	Sumac-Ash Succession	2
V35 V36	Mature Oak Ravine Forest (Disturbed Remnants)	2
V37 V38 V39	Immature Mixed Hardwood Ravine Forest (Disturbed)	3
V40	Mature Sugar Maple Ravine Forest (Disturbed)	3
V41	Old Field Succession	3
V42 V43	Mature Willow Bottomland	3

Code	Site/Unit	Plate
V44 V45 V46	Mature Oak Ravine Forest (Disturbed)	3
V47	Cattail Marsh	3
V48	Ash-Hawthorn Succession	3
V49	Immature Ash Bottomland	3
V50	Mature Sugar Maple Ravine Forest (Disturbed)	3
V51 V52 V53	Old Field Succession	3
V54	Mature Ash Bottomland	3
V55 V56	Immature Elm Swamp	3
V57	Thicket Swamp, Marsh and Pond Complex	3
V58 V59 V60	Mature Oak Forest	3
V61	Immature Ash Swamp	3
V62 V63	Elm-Ash Succession	3
V64	Old Field Succession	3
V65 V66	Mature Willow Bottomland	3
V67	Manitoba Maple-Sumac Scrub	3
V68 V69 V70 V71	Willow-Cottonwood Successon	3
V72	Mature Oak Forest (Disturbed-Grove Park)	3
V73	Old Field Succession	3
V74	Immature Ash Swamp	3, 4
V75	Immature Elm Swamp	3, 4
V76	Coniferous Screen Planting/Scrub Succession	3
L - Landfill Sites		
L1	Kay Drage Park	4
L2	Hill Street Yard	4
L3	Main and Dundern	4
L4	Chatham Street near TH&B	4

Code	Site/Unit	Plate
B - Industrial Commercial Buildings		
B1	Warehouse Distribution and Woodworking Co.	4
B2	Fire Ruins	4
B3	City Plywoods	4
B4	TH&B Railway Yard	4
B5	Canadian Refractories Ltd.	4
B6	Canadian Westinghouse	4
B7	School	4
B8	Gerrard Co. Ltd.	4
B9	Weaver Coal Co.	4
B10	Bicycle Repair Shop	4
B11	Dundurn Builders Supply	4
B12	Auto Service	4
B13	Shopping Centre and Supermarket (Formerly Slater Steel Co. Ltd.)	4
B14	Acorn Lumber Co.	4
B15	CNR Yard (Formerly Canada Iron Foundries	4
B16	Steel Company of Canada	4
B17	Natco Building Supply (1971)	2
B18	Lumsden Brothers Ltd. Grocery	2
B19	Aldershot Cold Storage	2
B20	Aldershot Ltd. (1971)	2
B21	Aldershot Greenhouses Ltd.	2
B22	Refrigeration and Storage Ltd. (1971)	2
B23	Auto Repair	1
B24	Platinum Door Window Manufacturing (1971	1
B25	Ornamental Iron Works (1971)	1
B26	Voortman Bakery (1971)	1
B27	Dewcan Structures Ltd. (1971	1
B28	Auto Repair	1
B29	Feed Mill (1971	1
B30	Reichold Ltd. (Formerly Niagara Brand Spray Co., 1924)	1
B31	Aldershot Construction (Formerly Tip Top Canners, 1924)	1
B32	Diesel Equipment Ltd.	1
B33	IBL Industries	1
B34	Barton Tubes Ltd.	1

Code	Site/Unit	Plate
H - Heritage Sites (Man-Made)		
H1	Brick Apartments	4
H2	TH&B Station	4
H3	Limestone House	4
H4	McNab Street Presbyterian Church	4
H5	McNab Street Church Manse	4
H6	B[illegible] House	4
H7	Central Public School	4
H8	St. Mark's Anglican Church	4
H9	CHCH Television	4
H10	Brick House	4
H11	Brick Row	4
H12- H21	Canada Street Buildings # [illegible]	4
H22	Cathedral of Christ the King	4
H23	Hamilton Cemetery	4
H24	High Level Bridge	[illegible]
H25	TH&B Railway Bridge	[illegible]
H26	[illegible] Railway Bridge	[illegible]
H27	[illegible]	[illegible]
H28	Ham[illegible]	[illegible]
H29	Desjardins Canal	3, 4
H30	Valley Inn Bridge	[illegible]
H31	[illegible] Cemetery	[illegible]
H32	[illegible] Cemetery	[illegible]
H33	Halton Ceramics Ltd.	[illegible]
H34	Burlington West Train Station	3

Code	Site/Unit	Plate
A - Archaeology Sites		
A1	Burlington Heights Ramparts	3, 4
A2	Cholera Mass Grave	3
A3	Burlington Heights	4
A4	Indian Creek	1
P-Parks, Recreation Sites		
P1	Mountain Face Park	4
P2	Kay Drage Park	4
P3	Hamilton Harbour Lookout	3, 4
P4	Desjardins Canal	3, 4
P5	Harvey Park/Dundurn Park	3, 4
P6	RBG Rock Garden	3
P7	Valley Inn Hotel Park	3
P8	Pedestrian Bridge over CN Track	3
P9	Spring Garden Park	3
P10	Hidden Valley Park	2
P11	Grove Park	2
P12	Leighland Park	1

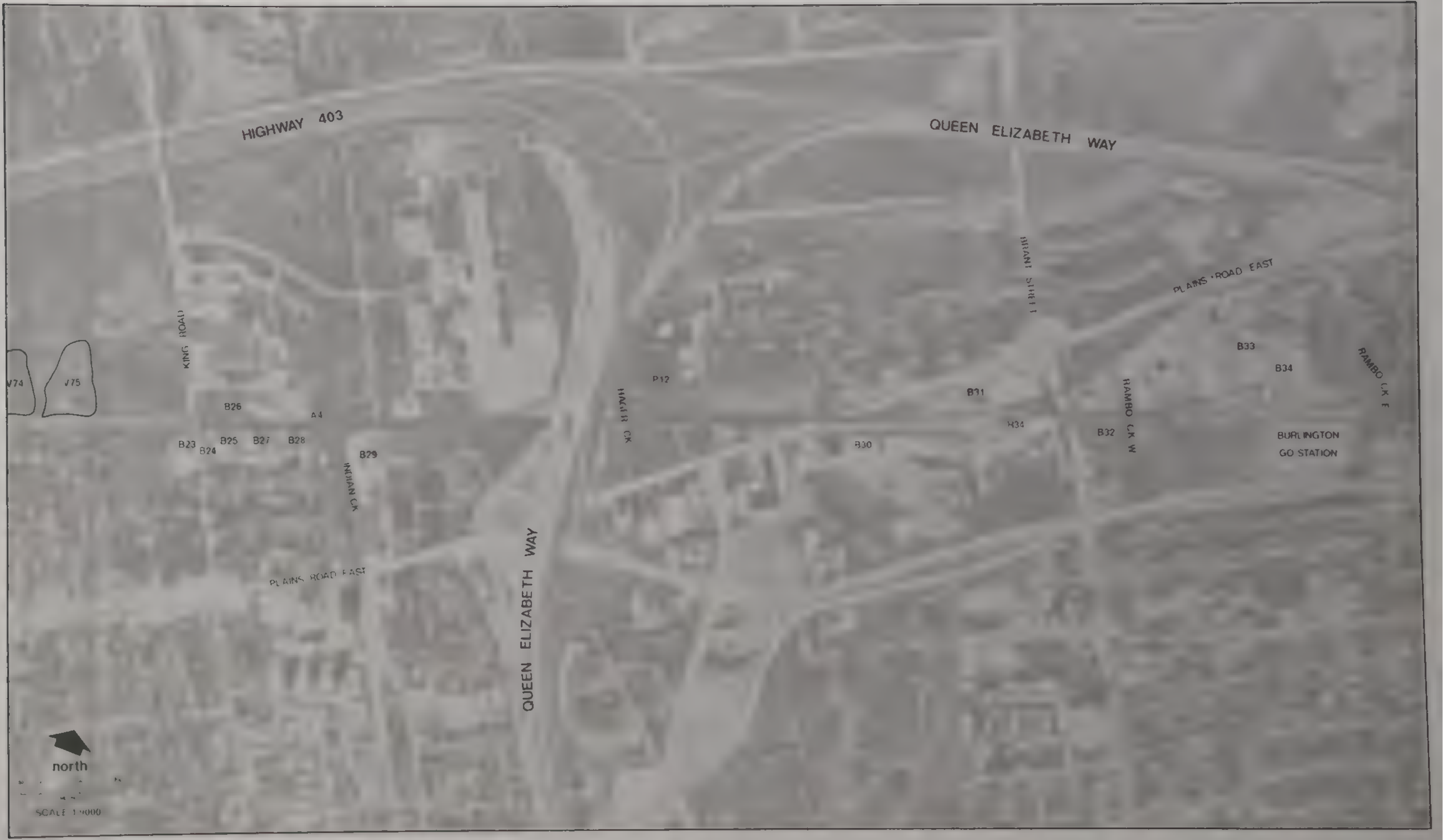

PLATE 1: Burlington GO Station to King Road

GO Train Expansion Program
Burlington - Hamilton

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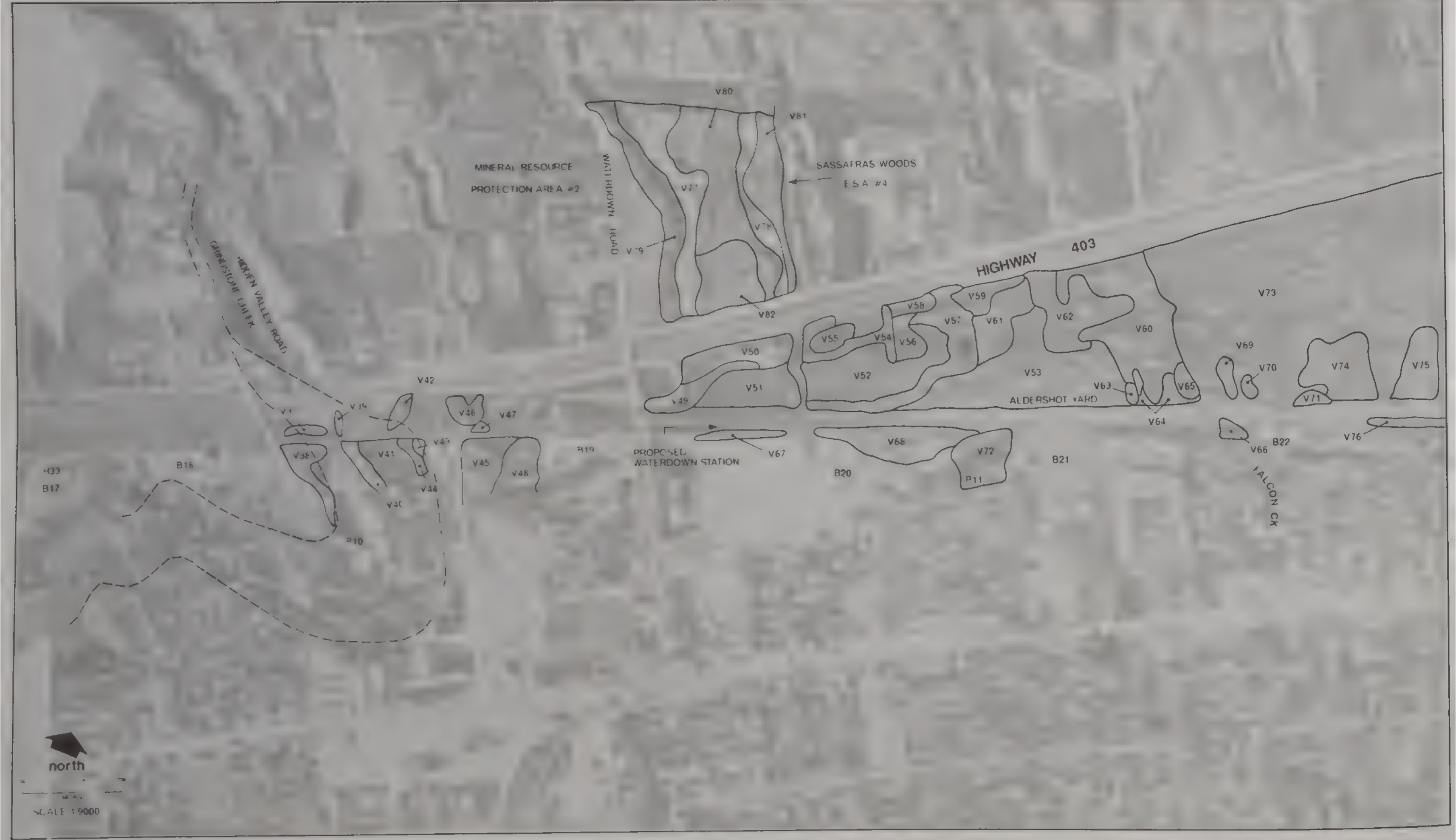

PLATE 2: West of King Road to Hidden Valley Road

--- Grindstone Creek E.S.A. #3

GO Train Expansion Program

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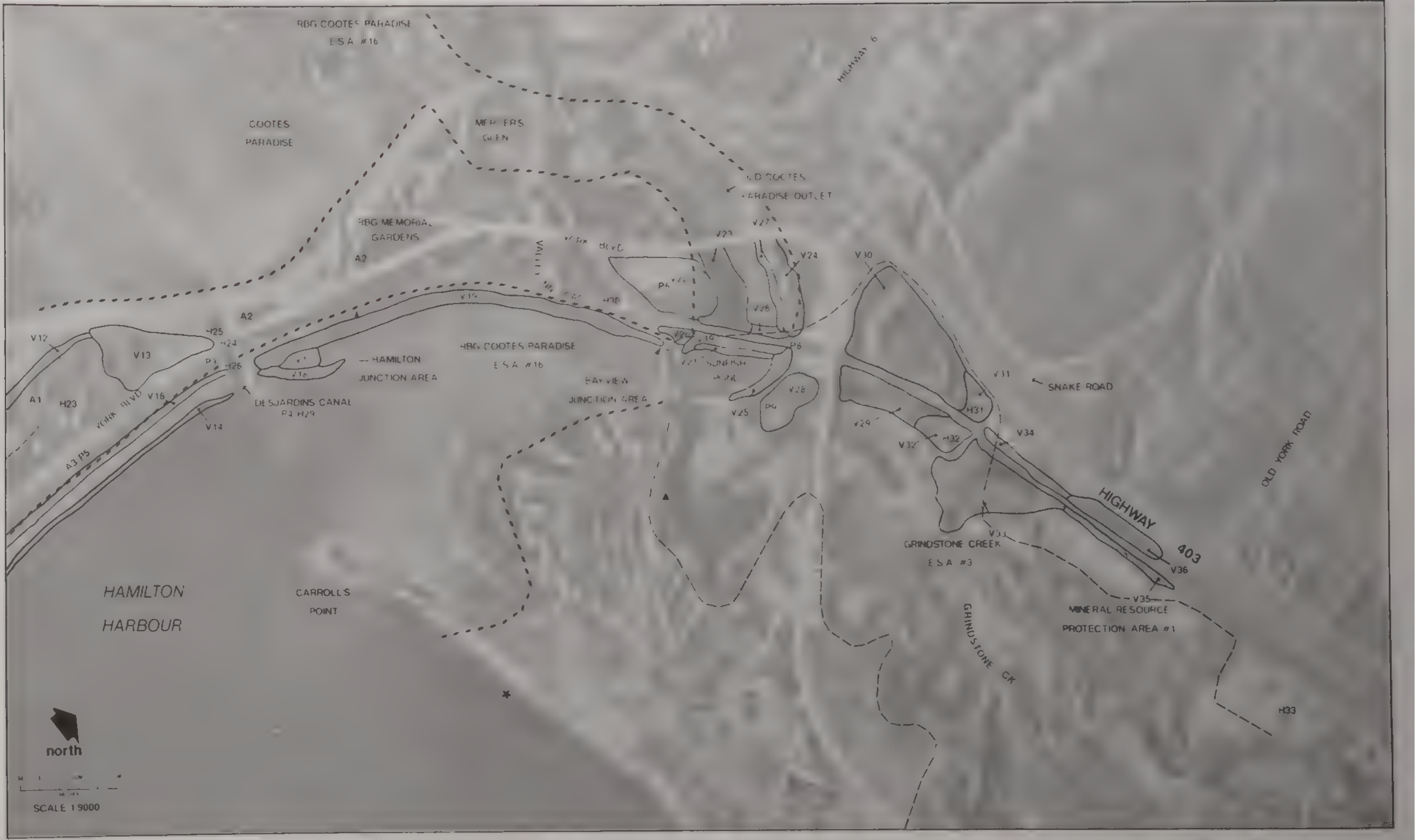

PLATE 3: Old York Road to Desjardins Canal

- - RBG Cootes Paradise E.S.A. #16

— — Grindstone Creek E.S.A. #3

Eastern Spiny Softshell Turtle:

* Specimen Captured (1981)

▲ Sightings (1984)

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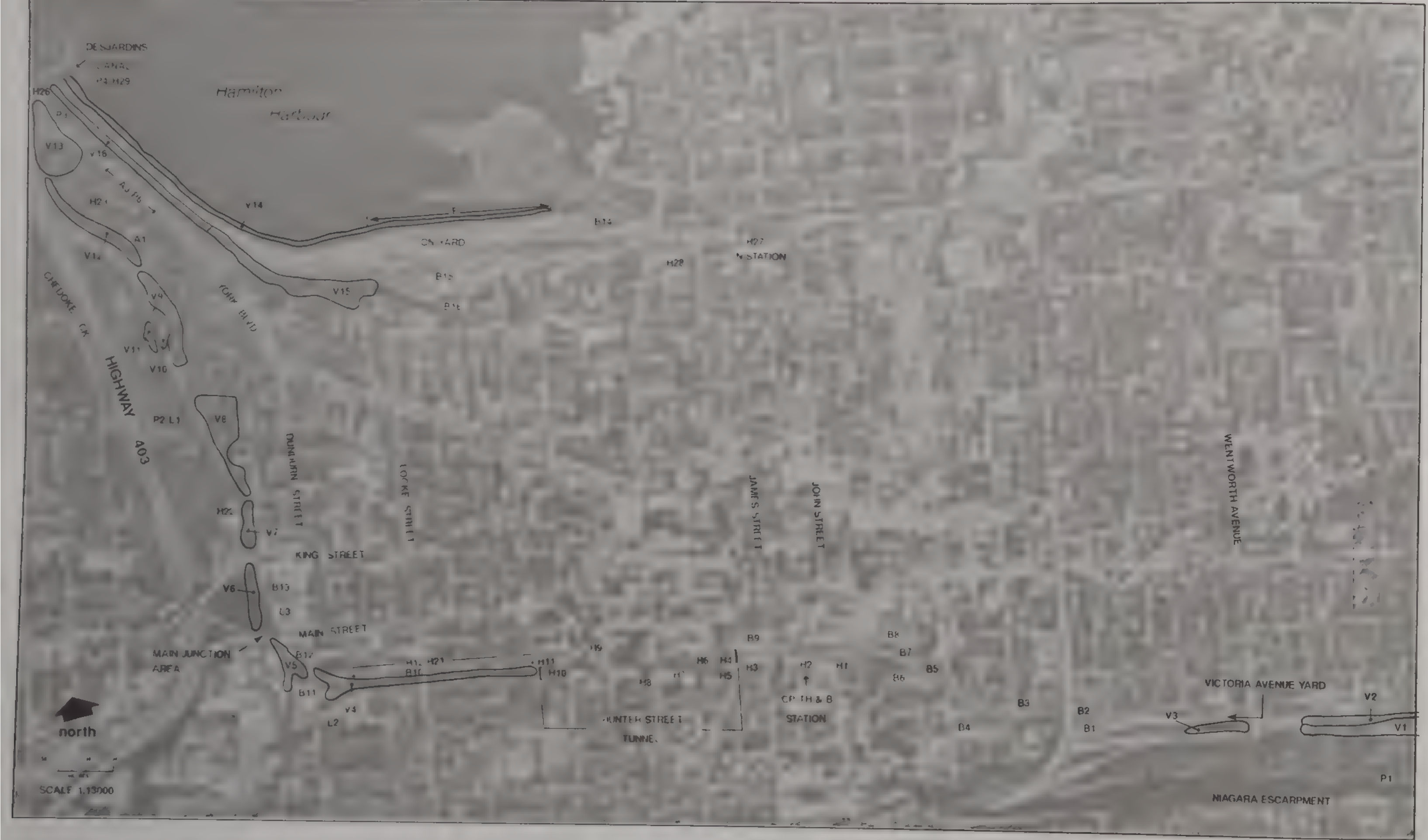

PLATE 4: Desjardins Canal to Victoria Avenue Yard

F Productive Littoral Area (warmwater fisheries)

GO Train Expansion Program

Burlington - Hamilton

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AND CONSULTING ECOLOGISTS

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APPENDICES

APPENDIX A

1) Vegetation Assessment Criteria
2) Summary of Vegetation Cover Types

GO Transit Service Expansion Program, Burlington to Hamilton

Vegetation Assessment Criteria

1 Methodology

Information on vegetation resources in the study area was obtained from existing planning documents and from field studies. Several background studies for the GO-ALRT program formed the basis of background data for the present study These included the Hamilton Section Environmental Working Paper 3 1 - Vegetation (Landplan, 1984), the Burlington Section Environmental Assessment document (Fenco, 1985) and the Biological Survey of Sassafras Woods (Fenco, 1984)

Field studies were restricted to areas where background information was either lacking or where issues of ecological significance were inadequately described in the GO-ALRT Program All of the Burlington section areas were rechecked, including a detailed survey of Sassafras Woods In the Hamilton section, field studies were restricted to layover sites (Victoria, Aberdeen, Kinnear Yards) and the Grindstone Creek valley system

The following data were collected for areas subjected to detailed field study: relative abundance of tree species, average diameter, canopy closure, relative age, biological health, history of disturbances, and soils and drainage Each area was assigned a significance rating and a sensitivity rating based upon the following criteria

Significance Rating: High - containing regionally, provincially, nationally rare or significant species*
- relatively undisturbed, with well-established plant cover, few weedy species, high botanical diversity
- associated with a streamcourse or other feature of biological significance
- linked to other communities by natural corridor(s)

Moderate - relatively undistubed, and meeting one other of the 'high' criteria

Low - disturbed, with weedy species predominating

Sensitivity Rating: Sensitivity to development (high, medium or low) based on the capability to withstand construction impacts and intended after-uses. Factors considered included the sensitivity of vegetation to the following changes in local environment

i) drainage changes affecting local water tables,

ii) edge and/or canopy disturbance,

iii) soil compaction and root zone disturbance,

iv) microclimate modification, and

v) exposure to salt and other air-borne contaminants

Sensitivity ratings should be interpreted as follows

HIGH - severe constraints of drainage, topography, erosion potential, and/or significant botanical features, with minimal capability for mitigation

MODERATE - moderate constraints of the above, impacts can be mitigated with appropriate precautionary and rehabilitative measures

LOW - limited constraints, type of vegetation lacks significance to warrant preservation, or can be readily re-established following disturbance

2. Findings

Eighty-two vegetation units were identified in the study corridor These are summarized in the table which follows, and are mapped on Plates 1 to 4 in the main text of the report

* Species significance as based upon the following references

Argus, G and D White 1987 Atlas of the Rare Vascular Plants of Ontario Parts 1-4 Botany Division, National Museum of Natural Science, Ottawa

Ecologistics Ltd 1976. Hamilton-Wentworth Region Enviromentally Sensitive Areas Study. Hamilton, Grand River, Halton and Niagara Peninsula Conservation Authorities

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Paton, D , and M Sharp 1979 A Biological Inventory of Halton Conservation Authority Properties Halton Region Conservation Authority

Regional Municipality of Halton, 1978 Environmentally Sensitive Areas Study Planning Department

Sutherland, D 1981 A Provisional List of the Rare Vascular Plants of the Regional Municipality of Halton, Ontario Regional Municipality of Halton Planning Department

Summary of Vegetation Cover Types

Unit No.	Dominant Cover Type	Average Tree Diameter (cm)	Significance Rating	Sensitivity Rating	Significant Species/Issues
V-1	Mature Sugar Maple Escarpment Forest	20-40	Moderate	High	Bladdernut
V-2	Immature Manitoba Maple Bottomland	15-20	Low	Moderate	n/o
V-3 V-4 V-5 V-6 V-7 V-8	Man Maple-Aspen Succession (Embankments)	8-10	Low	Moderate	n/o
V-9	Mature Oak Ravine Forest	30-40	Moderate	High	n/o
V-10	Mature Parkland (Cemetery)	30-40	Low	Moderate	n/o
V-11	Mature Oak Forest	30-40	Moderate	High	n/o
V-12 V-13	Sumac-Aspen Succession (Embankment)	10-15	Moderate	High	n/o
V-14	Disturbed Harbour Shore	n/a	Low	Moderate	n/o
V-15 V-16	Mature Mixed Ravine Forest (Disturbed)	30-40	Moderate	High	n/o
V-17	Cattail Marsh	n/a	Moderate	Moderate	n/o
V-18	Willow-Man Maple Sandbar Succession	15-30	Moderate	Moderate	n/o

Abbreviations and Information Sources

S(R)	Significant in Region
R(R)	Rare in Region
R(O)	Rare in Ontario
R(C)	Rare in Canada
n/o	none observed

Regional Status	Environmentally Sensitive Areas Study 1978 R M Halton Hamilton-Wentworth Region Environmentally Sensitive Areas Study 1976 Ecologistics Ltd Jakeb Densmore and Warren 1980 1980 Field Study of ESA's in Halton R M Halton Paten and Sharp 1979 A Biological Inventory of Halton Conservation Authority Properties Halton Region Conservation Authority Sutherland, 1981 A Provisional List of the Rare Vascular Plants of the Regional Municipality of Halton Ontario R M Halton
Provincial/National Status	Argus and White 1987 Atlas of the Rare Vascular Plants of Ontario Parts 1-4 National Museum of Natural Science Ottawa

Summary of Vegetation Cover Types (continued)

Unit No	Dominant Cover Type	Average Tree Diameter (cm)	Significance Rating	Sensitivity Rating	Significant Species/Issues	
V-19	Man Maple-Willow-Aspen-Sumac-Ash Succession (Embankment)	15-30	Moderate	Moderate	n/o seepage zones	
V-20	Immature Parkland (Interpretive Display)	20-30	Low	Low	n/o	
V-21	Cattail Marsh	n/a	Low	Moderate	n/o	
V-22	Immature Parkland (R B G Rock Garden)	15-25	Low	Moderate	n/o	
V-23 V-24 V-25	Mature Oak Ravine Forest	30-50	High	High	Chinquapin Oak	S(R)
V-26	Immature Mixed Hardwood Succession(Elm, Ash) (Embankment)	15-20	Moderate	High	n/o	
V-27	Loosestrife-Cattail	n/a Marsh	Low	Low	n/o	
V-28	Mature Parkland (R B G Spring Garden)	15-30	Low	High	n/o	
V-29 V-30	Mature Oak Ravine Forest	20-30	High	High	Black Maple Rue Anemone Bittersweet Buffaloberry Snowberry Bellwort Dryland Blueberry Flowering Dogwood Sassafras	S(R) S(R) S(R) S(R) S(R) S(R) S(R) R(R)(O)(C) S(R)
V-31 V-32	Mature Parkland (Cemeteries)	20-30	Moderate	High	n/o	
V-33	Mature Oak Ravine Forest	20-30	High	High	Black Maple Rue Anemone Sassafras Snowberry Dryland Blueberry	S(R) S(R) S(R) S(R) S(R)
V-34	Sumac-Ash Succession	10-15	Low	Low	n/o	
V-35 V-36	Mature Oak Ravine Forest (Disturbed Remnants)	15-30	High	Moderate	Bittersweet Sassafras Snowberry Dryland Blueberry	S(R) S(R) S(R) S(R)
V-37 V-38 V-39	Immature Mixed Hardwood Ravine Forest (Disturbed)	15-30	Low	High	n/o	

Summary of Vegetation Cover Types (continued)

Unit No	Dominant Cover Type	Average Tree Diameter (cm)	Significance Rating	Sensitivity Rating	Significant Species/Issues	
V-40	Mature Sugar Maple Ravine Forest (Disturbed)	25-45	Low	High	n/o	
V-41	Old Field Succession	15-25	Low	Low	n/o	
V-42 V-43	Mature Willow Bottomland	40-60	Low	Moderate	n/o	
V-44 V-45 V-46	Mature Oak Ravine Forest (Disturbed)	30-40	Moderate	High	n/o	
V-47	Cattail Marsh	n/a	Low	Low	n/o	
V-48	Ash-Hawthorn Succession	10-15	Low	Low	n/o	
V-49	Immature Ash Bottomland	25-30	Low	Moderate	n/o	
V 50	Mature Sugar Maple Ravine Forest (Disturbed)	30-75	Low-Moderate	High	Stoneroot	S(R)
V-51 V-52 V-53	Old Field Succession	15-25	Low	Low	Scattered specimen trees 40-90 cm	
V-54	Mature Ash Bottomland	30-90	Low	Moderate	n/o	
V-55 V-56	Immature Elm Swamp	25-30	Low	Low	n/o	
V-57	Thicket Swamp, Marsh and Pond Complex	20-40	Moderate	High	n/o	
V-58 V 59 V-60	Mature Oak Forest	30-75	Low-Moderate	High	Bristly Greenbriar Black Oak Severe channel erosion along Falcon Creek	S(R) S(R)
V-61	Immature Ash Swamp	20-30	Low	Moderate	n/o	
V-62 V-63	Elm-Ash Succession	<15-20	Low	Low	n/o	
V-64	Old Field Succession	15-25	Low	Low	n/o	
V-65 V-66	Mature Willow Bottomland	30-75	Low	Moderate	n/o	
V-67	Man Maple-Sumac Scrub	10-20	Low	Low	n/o	

Summary of Vegetation Cover Types (continued)

Unit No	Dominant Cover Type	Average Tree Diameter (cm)	Significance Rating	Sensitivity Rating	Significant Species/Issues	
V-68 V-69 V-70 V-71	Willow-Cottonwood Succession	20-45	Low	Low	n/o	
V-72	Mature Oak Forest (Disturbed-Grove Park)	45-75	Moderate	High	Black Oak	S(R)
V-73	Old Field Succession	15-25	Low	Low	n/o	
V-74	Immature Ash Swamp	20-30	Low	Low	n/o	
V-75	Immature Elm Swamp	20-30	Low	Low	n/o	
V-76	Coniferous Screen Planting/Scrub Succession	10-20	Low	Low	n/o	
V-77 V-78	Immature Mixed Bottomland Forest	20-40	Moderate	High	Spicebush	U(R)
					Horse-balm	S(R)
V-79 V-80 V-81	Mature Oak Ravine Forest	30-60	High	High	Horse-balm	S(R)
					Flowering Dogwood	R(R)(O)(C)
					Sassafras	S(R)
					Black Oak	S(R)
					Dryland Blueberry	S(R)
V-82	Mature Mixed Upland Forest	30-45	High	High	Flowering Dogwood	R(R)(O)(C)
					Sassafras	S(R)

APPENDIX B

Halton Region Conservation Authority Correspondence
May 10, 1988

HALTON REGION
CONSERVATION AUTHORITY
P.O. Box 1097, Station B, 2596 Britannia Road, West
Burlington, Ontario L7P 3S9 (416) 336-1158

May 10, 1988.

Mr. Brian Ogden
Toronto Area Coordinating Office
Policy Planning Branch
Ministry of Transportation
3rd Floor, West Tower
1201 Wilson Avenue
Downsview, Ontario
M3M 1J8

Dear Sir:

Re: **GO Train Service Expansion Program**
Burlington to Hamilton Study
File No.: PPR-11

Further to our walk of the railway embankment between Snake Road and the C.P.R. cut-off, I wish to advise the following.

Within the Authority's watershed, that is the area between Snake Road and the pedestrian bridge at the Royal Botanical Garden spring gardens, the expansion of the rail line to the north would appear to cause less disruption to the several tributaries of the Grindstone Creek crossing the area than an expansion to the south. This may or may not complicate the preferred alignment for the track to the east and west with respect to environmental impacts. The ravines which will be affected in the aforementioned area, while well defined, are not of such significance as to preclude their disruption if it is considered better to locate the new track to the south of the existing line when considering all environmental impacts.

With respect to the Waterdown station area, Authority staff remind you that at the time of the GO ALRT review it was established that the creek should be maintained in an open channel state to the greatest extent possible. Present Authority policy requires flood depths under Regional Storm conditions should be kept to a minimum of 0.43 metres for day time parking.

Finally, we look forward to reviewing in detail the requirements for the crossing of the Grindstone Creek when you are in a position to present those to our staff.

I trust this information is of assistance.

Yours truly,

John D. Hall, Manager
Resource Planning.

JDH:mrl

ccs: Mr. Peter Rice, Royal Botanical Gardens, P.O. Box 399, Hamilton L8N 3H8
Mr. John Coates, Hamilton Region Conservation Authority, P.O. Box 7099, 838 Mineral Springs Road, Ancaster L9G 3L3
Mr. J. S. Sutherns, McCormick, Rankin, 60 Brierwood Avenue, Mississauga L5G 3N6

Appendix C

Economic Impact Assessment

GO TRAIN SERVICE EXPANSION PROGRAM

ECONOMIC DEVELOPMENT ASSESSMENT

November, 1987

Cresap/Barnard

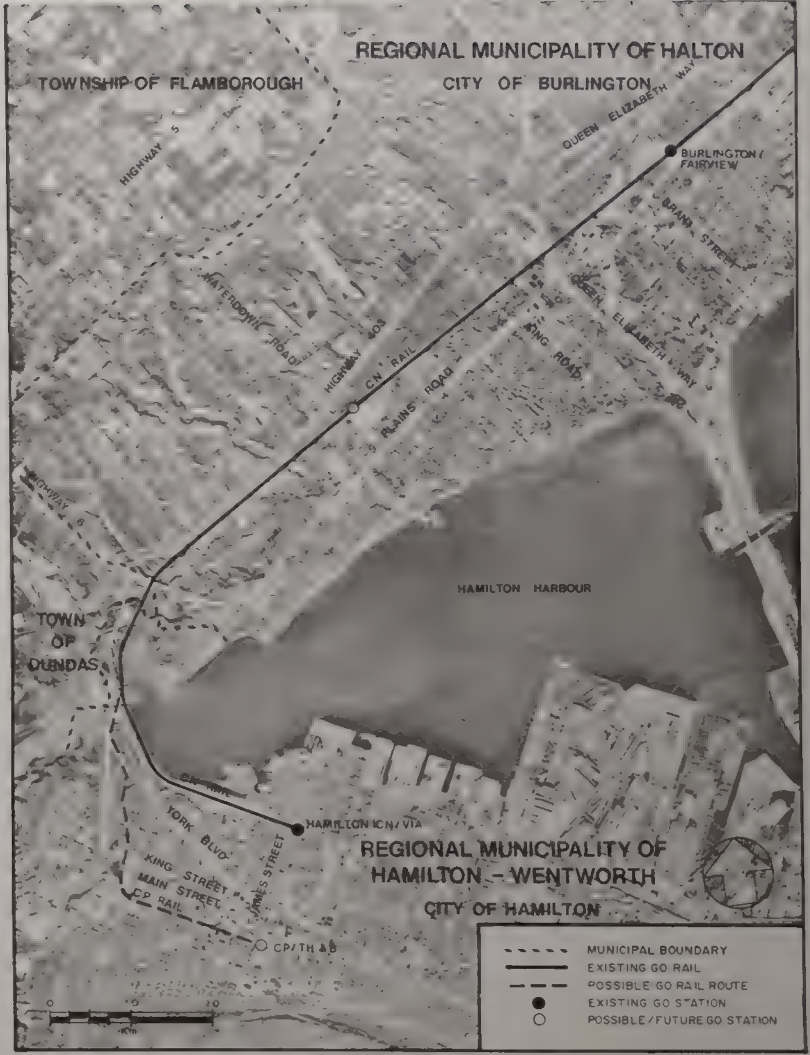
I - INTRODUCTION & METHODOLOGY

In this first chapter, we outline the background to the study, the role of the economic assessment and a brief overview of the methodology utilized in the study to date.

STUDY BACKGROUND

The economic assessment forms an integral part of the overall assessment of the costs and benefits of expanding GO Train service to Hamilton. The general events leading up to the economic assessment included:

- In 1985 the Government of Ontario decided to proceed with a GO Train Service Expansion Program. As part of this program, the Government announced that it would investigate the feasibility of expanding service westerly from Burlington to Hamilton. (The Government has committed to extend full service from Oakville to Burlington).
- McCormick Rankin assembled a team to carry out the assessment of service expansion. This team comprises:
  - Morrison Hershfield (rail specialists)
  - Jim Strasman Architects (urban design)
  - Ecoplans (natural environment)
  - Tranplan (transportation demand analysis)
  - Cresap/Barnard (economic impact assessment).
- The overall study objectives have been described as:
  - To determine long range recommendations for GO Train service to Hamilton.
  - To provide for an integrated local and regional transit system through the development of a single central Hamilton station.
  - To define staging plans that would allow for the implementation of the recommendations.
  - To protect a route and property for the recommendations.
- The general study area is shown in Exhibit I.1.



GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

KEY PLAN

THE ROLE OF THE ECONOMIC ASSESSMENT

The role of the economic assessment is to answer, to the extent that it is possible, a number of questions:

- What type of economic development benefits is the expansion of service likely to bring to Hamilton? For example:
  - Will businesses be more likely to move to, stay or expand in Hamilton if service is expanded?
  - Will people be more likely to live in Hamilton due to the expanded service?
- What is the difference in benefits between the various alternatives? For example:
  - Does extending service into the downtown along the CP line result in greater economic development benefits than extending along the CN line?
  - Does providing full service (i.e., movements both ways either all day or in peak periods) provide greater benefits than partial service (i.e., movements one way only in peak period)?

STUDY METHODOLOGY

The study methodology began with an assessment of the existing economic situation within Hamilton, followed by the development of hypotheses on how service expansion might influence the economic development of Hamilton in general. The final step was an evaluation of how each of the various alternatives might influence economic development.

- Understanding the Existing and Future Population and Economic Base of Hamilton: We began by developing a profile of the base case - what kind of economic base does Hamilton have and what kind of people live and work there, plus what is the outlook for the future? This information provided the base against which we assessed the various alternatives.

  Information was obtained from secondary sources on: existing and projected populations at a sub-area level; existing and projected labour force and employment figures; and existing and planned land use.

- Understanding the Forces Influencing Economic Development: To determine what difference expansion of GO train service might make, we developed a profile of the forces influencing the economic development of Hamilton.

  Our experience with previous studies of this kind, as well as a review of case studies elsewhere indicates that economic development is the product of a complex set of interacting forces including: the influence of public policy (e.g., economic development strategies, municipal plans and zoning by-laws); market conditions (e.g., the relative competitiveness of the area as measured by affordability - land costs, rental rates, and other variables); external accessibility to markets and labour; internal accessibility; availability of land and space; condition of buildings - susceptibility to redevelopment etc.

  To develop a profile of these forces we: collected and reviewed existing studies, plans and municipal documents; developed an overview of the commercial, residential, retail, tourism and industrial markets of Hamilton within the context of the Greater Toronto Area market; calculated the development potential within the catchment areas of the stations and developed an overview of the overall economic outlook for Hamilton.

  A key input to our understanding of the economic development outlook for Hamilton was a series of interviews with various groups within Hamilton and regionally. Groups interviewed included:

  - Regional and local planning departments
  - Business interest groups
  - Economic and tourism development officials.

- Assessing the Impact/Benefits of Service Expansion: We identified all the potential economic changes which service expansion might bring about, and assessed the differences between the various levels of service expansion (e.g., full service vs. partial service).

  We developed a series of hypotheses and tested the reasonableness of these hypotheses given our knowledge of the existing situation, the future outlook for Hamilton, and the characteristics of service expansion.

The results of our analyses to date are summarized in the chapters which follow.

II - EXISTING & FUTURE OUTLOOK FOR HAMILTON

In this chapter we provide a profile of the current economic situation in Hamilton and the outlook for economic development and population growth into the future. In the sections below we provide a point form profile of:

- Population Growth (Historical and Forecasted).
- Employment Growth (Historical and Forecasted).
- Journey-to-Work Characteristics.
- Residential Market Overview.
- Commercial & Retail Market Overview.
- Tourism & Convention Market Overview.
- Industrial Market Overview.
- Existing Land Use.
- Planned Land Use.
- Economic Development Policy/Strategy.

POPULATION GROWTH

The Region of Hamilton-Wentworth's population has grown in recent years, while the City of Hamilton's population has remained relatively steady. Looking to the future, the Region is likely to sustain its positive growth rates as long as there are no major downturns in the economy or in the competitiveness of the Greater Toronto Area. A summary of our observations regarding historical and projected population growth follows:

Hamilton-Wentworth's Population Increasing Steadily Since 1981

- Hamilton-Wentworth grew by 2.9% between 1981 and 1986 (an average of 0.6% growth/annum).
  - This is stronger than in the 1970's.
  - But weaker than regions closer to Metro (Durham, York, Peel and Halton).

One of the primary reasons for improved growth is reduction in out-migration.

(Sources: Census of Canada and Hamilton-Wentworth Planning and Development: Greater Hamilton Population Trends - Demographics - Report 87 - 1)

- Toronto CMA is largest source of net migration gains.
  - Accounted for 27.3% of in-migrants between 1976 and 1981.
  - Accounted for 22.4% of out-migrants in same time period.
  - Net inflow from Toronto CMA was 1750 people.
  - Total net migration remains negative (i.e., more people leave than come in).

Growth Has Been Focused in Ancaster, Stoney Creek, and Flamborough

- Ancaster grew by 20% between 1981 and 1986.
- Stoney Creek grew by 19% between 1981 and 1986.
- Flamborough grew by 7% between 1981 and 1986.
- See Exhibit II.1.

(Source: 1986 Census Final Counts)

But City of Hamilton Population Remaining Steady

- Overall city population increased by only 0.1% from 1981 to 1986.
- Assessment figures from 1982 and 1985 indicate that decline in population in lower city was largely offset by increase in population in Hamilton Mountain (See Table below).
  - Much of the decline is due to young adults moving to the suburbs, leaving behind smaller households and an older population.

EXHIBIT II.1

HAMILTON-WENTWORTH REGIONAL POPULATION GROWTH
1981 - 1986

MUNICIPALITY	1981	1982	1983	1984	1985	1986	% GROWTH 1981-1986
Hamilton	306,434	308,102	307,178	306,256	307,960	306,728	0.1
Stoney Creek	36,762	37,481	39,505	40,552	41,964	43,554	18.5
Flamborough	24,470	24,575	24,600	24,624	25,541	26,142	6.8
Dundas	19,586	19,699	19,719	19,738	20,081	20,118	2.7
Ancaster	14,428	14,733	14,747	14,762	16,542	17,264	19.7
Glanbrook	9,765	9,585	8,627	8,635	9,446	9,592	-1.8
Total	411,445	414,175	414,376	414,567	421,534	423,398	2.9
	C	A	A	A	A	C	

Sources:
A: Ministry of Revenue, Assessment Division
C: Census of Canada

Area	1982	1985	net change
Hamilton Mountain	112,355	115,154	+ 2799
Lower City	195,792	191,982	- 3810
Total	308,147	307,136	- 1011

(Source: Regional Assessment, 1982 and 1985)

Population Within Station Catchment Areas Varies

- Current population within 750 metres (walk-in distance) is much greater for CP station than for CN station (See Exhibit II.2 for catchment areas):
  - 12,890 people within CP station catchment (based on 1981 figures extrapolated to 1985).
  - 6,900 people within CN station catchment.

Hamilton-Wentworth Population Forecasted to Grow Faster than City of Hamilton

- Hamilton-Wentworth's population is forecasted to grow by 5.9% from 1981 to 1991.
  - From 411,445 in 1981 to 435,700 in 1991.
- City of Hamilton's population is forecasted to grow by 1.5% from 1981 to 1991.
- Main source of growth within Hamilton-Wentworth will continue to be Ancaster, Dundas and Flamborough.

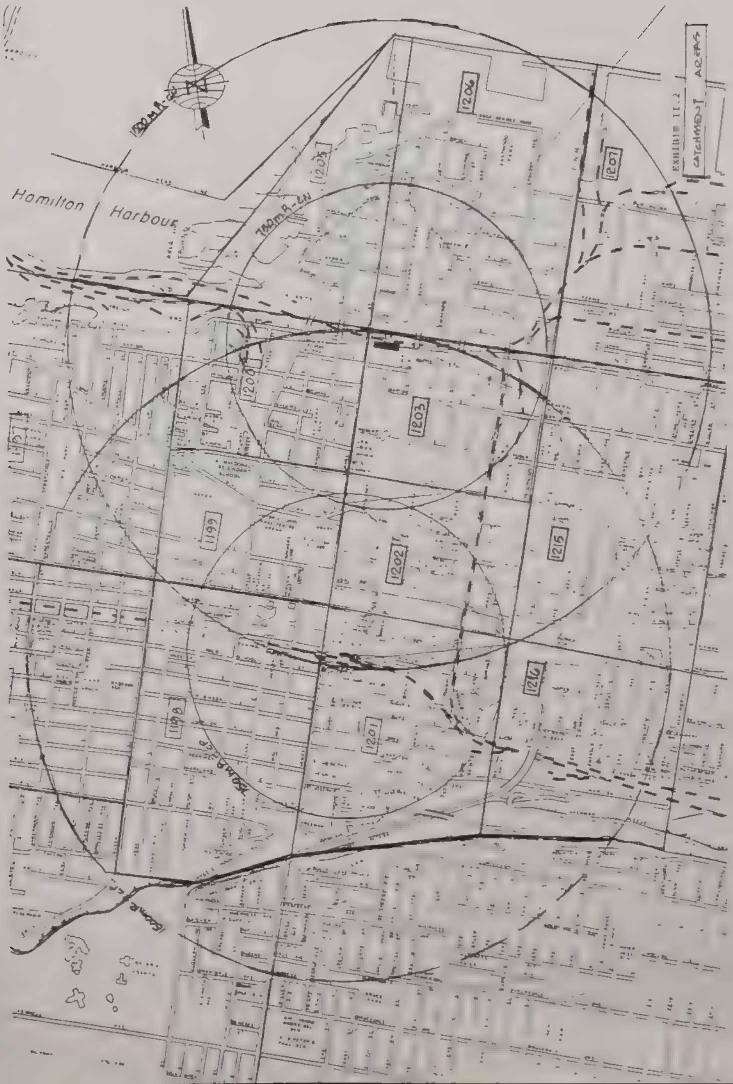
(Source: Population and Employment Forecasts for the Greater Toronto Area, MTC, June 1987)

Core Population within City of Hamilton to Grow by 5.8% Between 1981 and 2001

- Major growth areas to be Central and Durand neighborhood.
- North End population expected to decline.

EXHIBIT II.2

CATCHMENT AREAS



Station Catchment Areas Vary Significantly in Projected Growth

- Population within CP catchment area is projected to grow significantly from 12,890 in 1985 to approximately 14,120 by 2011.
- But population within CN catchment area is projected to decline from 6,900 in 1985 to 6,600 in 2011.
- See Exhibit II.3.

EMPLOYMENT GROWTH

Hamilton CMA's Employed Labour Force Growing

- By 1986, employed labour force was 280,500.
  - Up 7.2% from 1985.
  - Growth for Ontario as a whole from 1985 to 1986 was 3.5%.

Service Sector Employed Labour Force Increasing

- Increasing significantly since the recession.
- Current level of service employment approximately 93,400.
- Employment growth focussed in managerial and professional as well as transportation and service occupations.

Manufacturing Employed Labour Force Has Been Declining

- Decreased from 91,600 in 1981 to 76,200 in 1986.
- Employment decline focussed in primary, processing and construction occupations.

Employment within Station Catchment Areas Varies Considerably

- Current employment within 750 metres (walk-in distance) is much greater for CP station than for CN station:
  - 21,860 employees within CP catchment (1985).
  - 7,330 employees within CN catchment (1985).

EXHIBIT II.3

POPULATION & EMPLOYMENT WITHIN LOCAL CATCHMENT AREAS OF STATIONS

For CN Station

	1981	1985	1991	2001 Low	2001 High	2011 Low	2011 High
Employment	5,751	7,330	9,690	9,853	10,336	10,068	10,765
Population	7,236	6,900	6,392	6,453	6,558	6,598	6,864

For CP Station

	1981	1985	1991	2001 Low	2001 High	2011 Low	2011 High
Employment	19,751	21,860	25,747	26,178	27,472	26,754	28,622
Population	12,366	12,890	13,675	13,970	14,193	14,115	14,555

Source: Population and Employment Forecasts for the Greater Toronto Area, Ministry of Transporation and Communcations, June 1987 - TARMS Zones

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Growth in Employment Expected to Continue

- Service sector likely to continue to be primary source of growth.

- Focus of growth to be in Central and Beasley areas.

Projected Employment Growth in Station Catchment Areas Varies

- Up 75% within CN catchment between 1981 and 2011.

  - From 5,751 in 1981 to 10,336 in 2011.

- Up 39% within CP catchment between 1981 and 2011.

  - From 19,264 in 1981 to 26,754 in 2011.

JOURNEY TO WORK CHARACTERISTICS

Most Hamilton-Wentworth Residents Work Within the Region

- In 1981, 86.8 % of employed labour force was employed within the area.

  - greater percentage than Halton or Peel.

But Outflow Has Been Increasing

- The proportion of residents commuting to jobs outside the Region increased between 1971 and 1981.

  - From 8.9% of the employed labour force in 1971 to 13.2% in 1981.

- Major destination is Halton.

  - Followed by areas external to the GTA and Metro Toronto.

  - See Exhibit II.4.

- But attraction of Peel is growing.

  - 301% increase in outflow to Peel between 1971 and 1981 relative to a 62% increase in outflow overall.

EXHIBIT II.4

WORK DESTINATIONS FOR HAMILTON-WENTWORTH COMMUTERS (1971-1981)

DESTINATION	1971	% Of TOTAL	1981	% OF TOTAL	% CHANGE 1971-1981
Durham	27	0.2	65	0.3	140.7
York	65	0.4	90	0.3	38.5
Metro Toronto	1,634	10.2	2,745	10.6	68.0
Peel	427	2.7	1,713	6.6	301.2
Halton	7,721	48.4	13,206	51.0	71.0
External	6,078	38.1	8,079	31.2	32.9
Total	15,952	100.0	25,898	100.0	62.3

Source: Census of Canada, 1971-1981

EXHIBIT II.5

ORIGINS OF HAMILTON-WENTWORTH WORKERS

ORIGIN	1971	% Of TOTAL	1981	% OF TOTAL	% CHANGE 1971-1981
Durham	31	0.2	58	0.2	87.1
York	67	0.3	112	0.4	67.2
Metro Toronto	1,045	5.3	830	2.8	-20.6
Peel	746	3.8	738	2.5	-1.1
Halton	11,782	59.7	19,979	67.1	69.6
External	6,078	30.8	8,079	27.1	32.9
Total	19,749	100.0	29,796	100.0	50.9

Source: Census of Canada, 1971-1981

Many Commute into Hamilton-Wentworth Particularly from Halton

- Halton accounts for over two-thirds of the inflow to Hamilton-Wentworth.
  - Followed by areas external to the GTA (e.g., areas to the west and south-east).
- Inflow from Metropolitan Toronto decreased between 1971 and 1981.
  - See Exhibit II.5.

(Source: Metropolitan Toronto Planning Department, December 1984)

RESIDENTIAL MARKET OVERVIEW

Hamilton offers a readily available stock of affordable ownership and rental housing. The cost of housing is significantly lower in Hamilton than it is in the market areas towards Toronto and in Toronto.

Hamilton Offers Stock of Affordable Ownership and Rental Housing

- Hamilton housing prices considerably lower than Mississauga/Toronto for comparable detached dwellings.
  - Two storey, executive detached house on Hamilton Mountain 20 - 60% lower.
  - $180,000 vs. $215,000 - $280,000 in Meadowvale and Scarborough, respectively.
  - See Exhibit II.6.
- Hamilton resale market is relatively active.
  - MLS listings and sales indicate strong demand.
    - similar to other local markets.
  - See Exhibit II.7.

EXHIBIT II.6

RESIDENTIAL MARKET OVERVIEW
OWNERSHIP HOUSING*
1982 - 1987

	House Prices ($)			MLS Sales (#)		MLS Listings (#)	
	1982	1987 High	1987 Low	1982 Jan 1 - July 31	1987 Jan 1 - July 31	1982 Jan 1 - July 31	1987 Jan 1 - July 31
HAMILTON	99,500				2,519		4,716
- Centre		165,000	82,000				
- East		153,000	80,000				
- Mountain		180,000	78,000				
- West		166,000	114,000				
BURLINGTON	120,000	198,000	112,000		1,236		2,343
OAKVILLE		225,000	125,000	889	1,752	3,433	3,192
MISSISSAUGA	124,000			1,682	4,944	5,619	9,894
- Mississauga		225,000	122,000				
- Meadowvale/ Streetsville		212,500	115,000				
TORONTO				9,449	17,532	30,443	35,782
- North Etobicoke		235,000	110,000				
- North Toronto		365,000	160,000				
- Scarborough/ Agincourt		280,000	145,000				
PICKERING	112,000	224,000	120,000	357	760	1,096	2,589
OSHAWA	95,000	180,000	80,000		2,207	n/a	4,397

Source: Royal LePage Survey of House Prices, 1982, 1987
Various Real Estate Boards, 1987

EXHIBIT II.7

HAMILTON-WENTWORTH
HOUSING STARTS

MUNICIPALITY	JAN.-JUNE/85	JAN.-JUNE/86	JAN.-JUNE/87
Ancaster	186	102	179
Dundas	39	20	107
Flamborough	200	96	94
Glanbrook	19	15	15
Hamilton	512	311	624
Stoney Creek	323	214	204
Greater Hamilton	1,279	758	1,223

Source: Canada Mortgage and Housing Corporation, 1985, 1986, 1987

RESIDENTIAL REAL ESTATE
ACTIVITY

INDICATOR	JUNE/85	JUNE/86	JUNE/87
Listings (Total Number)	11,525	11,036	12,488
Sales (Total Number)	5,829	6,385	6,378
Value of Sales ($ Millions)	444.8	570.7	734.7

Source: Metropolitan Hamilton Real Estate Board Housing Market Reports, 1982 - June, 1987

- Hamilton rental market less competitive than surrounding areas.
  - Hamilton Centre has had highest availability of rental accommodation in GTA.
    - other Hamilton areas slightly higher/comparable to competitive municipalities.
  - Availability reflected in lower rental costs.
    - between 10 - 80% lower, depending on location.
  - See Exhibit II.8.

Majority of New Housing Development In Suburban Locations

- Residential construction activity is currently at high levels.
  - Concentrated in Hamilton Mountain area.
  - Spreading to Stoney Creek and Ancaster/Dundas.

Some Redevelopment Occurring in Downtown Hamilton

- Condominium development beginning to take hold in core area.
  - Conversion of old Sun Life office building.
  - Two to three other proposals in the works.
- Durand and Northwest/Northeast neighborhood slowly undergoing rehabilitation/identifications.

COMMERCIAL & RETAIL MARKET OVERVIEW

Office Space Inventory Undergoing Growth

- Recent additions in core area have increased office inventory to over 2 million sq. ft.

EXHIBIT II.8

RESIDENTIAL MARKET OVERVIEW
RENTAL HOUSING

	VACANCY RATES (%)			MONTHLY RENTAL COSTS ($)		
	April 1981	April 1984	October 1986	April 1981	April 1984	October 1986
HAMILTON	1.1			n/a	347	397
Centre		2	0.7			
East		1.1	0.4			
Mountain		0.5	0			
West		0.2	0.1			
BURLINGTON	n/a	0.1	0	n/a	408	448
OAKVILLE	0.8	0.5	0.3	328	445	464-665
MISSISSAUGA	0.8	2.7	0.2	353	484	487-719
Mississauga Meadowvale/ Streetsville						
TORONTO						
Etobicoke	0.3	0.3	0.1	339	465	505-775
Toronto	0.4	0.6	0.2	391	505	561-616
Scarborough/ Agincourt	0.4	0.6	0.1	345	406	493-732
PICKERING	0.3	3.3	0.1	337	449	463-611
OSHAWA	1.2	0.2	0.2	307	402	448-584

Source: Canada Mortgage and Housing Corporation, Housing Market Reports, 1981, 1984, 1986.

  - Addition of nearly 600,000 sq. ft. in past four years.
  - Standard Life building and CIBC Tower resulted in 25% increase in downtown office space.
  - See Exhibit II.9.
- Also impacted on overall vacancy rates.
  - Current vacancy rate at 15.8%.
    - as low as 6.4% in 1981
    - high of 23% after Standard Life available for lease.
  - Class "A" buildings vacancy slightly lower than overall average.
    - CIBC Tower completed in 1987 is 30% vacant.
  - See Exhibit II.10.
- Rental rates lower than other downtown locations.
  - $20 - $23 gross compared to $35 - $40 in Toronto core.

Downtown Retail Sector Also Active

- Jackson Square current focal point for shopping.
  - Other specialty retail areas support downtown's shopping image.
    - recent renovation of Park Place
    - Hess Village
    - other BIA areas.
- Hamilton Mountain also has a large regional shopping facility.
  - Limeridge Mall attracts shoppers from surrounding region.
- But from a Greater Toronto Area perspective, Hamilton offers few unique higher order retail opportunities, which would attract shoppers from the areas between Toronto and Hamilton.

TOURISM & CONVENTION MARKET OVERVIEW

Hamilton Offers Numerous Major Attractions

- Two main tourist generators outside of core.
  - Royal Botanical Gardens (+700,000 visitors per year).
  - African Lion Safari (450,000 visitors per year).
- Blend of art, sports and theatre also available in core.
  - Art Gallery of Hamilton.
  - Copps Coliseum.
  - Hamilton Place.
  - Historical museums.
- Distinctive recreation facilities.
  - Wild Waterworks.
  - Conservation Areas and campgrounds.

Several Opportunities for New Visitor Attractions

- Hamilton is actively pursuing NHL franchise.
  - Copps Coliseum major league facility.
- Bid for 1994 Commonwealth Games.
- Part of 1996 Olympic bid.
  - Main events proposed for Hamilton facilities.
- Hamilton-Scourge Project of national significance.
- Theatre Aquarius now under construction.
- Waterfront redevelopment may incorporate major new attractions.

Convention Business is Strong

- Hamilton Convention Centre, Copps Coliseum and Trade Centre, and hotel facilities hosting large number of conventions annually.
  - 1987 to date indicates banner year for conventions.
  - Revenues and volumes up from previous years.

INDUSTRIAL MARKET OVERVIEW

Majority of New Activity in Outlying Business/Industrial Parks

- Hamilton-Wentworth developer of major portion of available industrial lands.
  - Hamilton Mountain, Ancaster and Stoney Creek industrial areas all prime locations.
  - Sales of publicly-owned industrial lands up significantly since 1983.
- Region's Economic Development Strategy supports development of suburban business parks.

Little Change in Harbour Industrial Lands

- Proposed Perimeter Road would improve access to harbour/industrial area and could stimulate greater redevelopment.
- Possibility exists that more industrial land will become available in this area in the near future

EXISTING LAND USE

Predominantly Residential Uses Around CN Station

- Stable low-medium density residential neighbourhood.
  - Older, established neighbourhood.
    - houses typically in excellent condition
    - declining household sizes due to childless couples and retirees.

EXHIBIT II . 9

OFFICE SPACE INVENTORY
HAMILTON CORE AREA
1981 - 1987

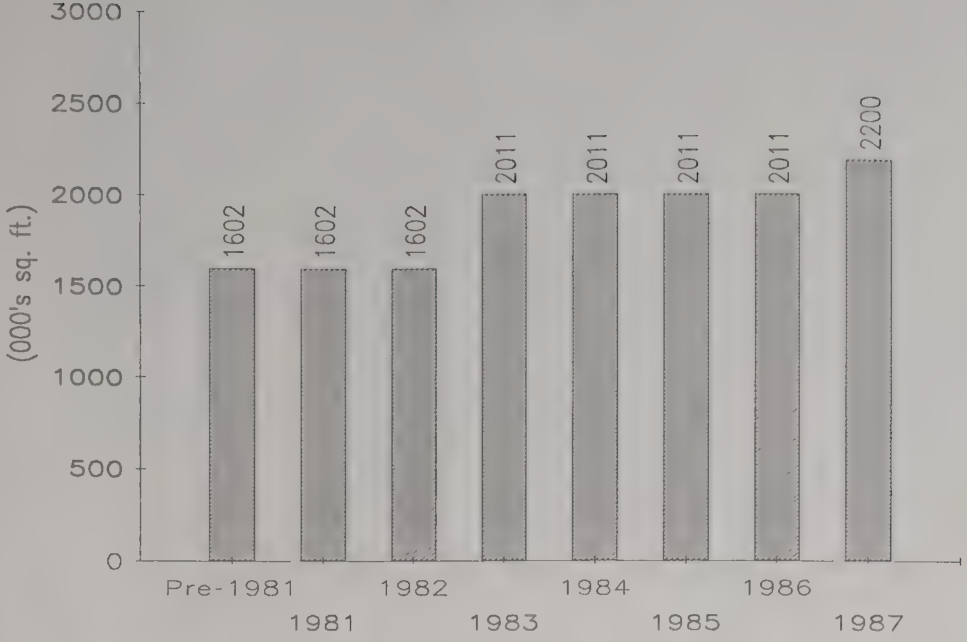
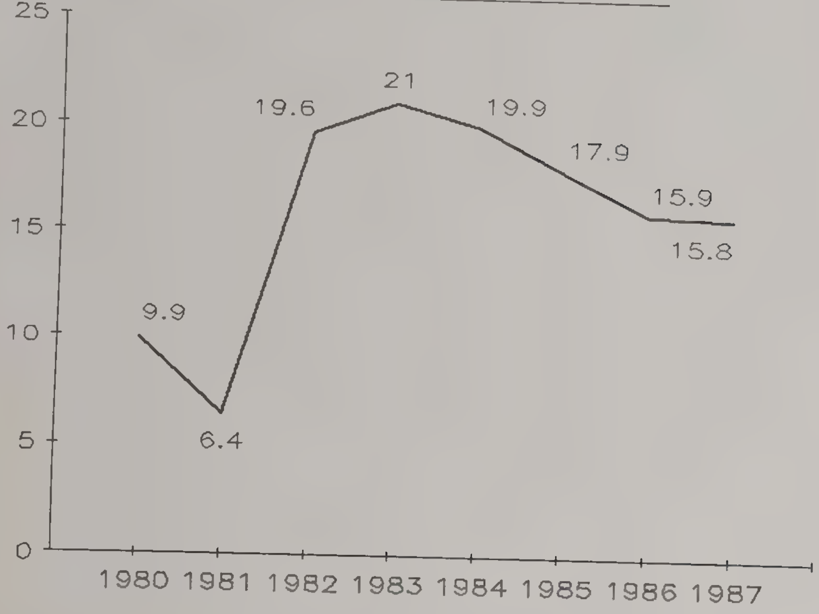


EXHIBIT II.10

OFFICE VACANCY RATES
HAMILTON
1980 - 1987



  - Little pressure for redevelopment.
    - land assembly would be extremely difficult
    - removed from outer fringe of core
    - proximity to potential waterfront redevelopment could make area to the north more attractive.
  - Tracks/overpass act as buffer to Northwest and Northeast neighbourhoods.
- Some convenience commercial activity centred on James and Barton.
- Small industrial area west of Bay and Barton.

CP Station Surrounded by Wide Mixture of Uses and Densities

- Proximity to downtown core reflected in mixed character of uses.
  - Institutional.
  - Office and retail commercial.
  - Highrise apartments.
- Large amount of (re)development activity.
  - Major office and residential projects underway.
    - Piggot/Sun Life condominiums
    - Unified Family Court
    - Former Bank of Montreal site.
  - Plus, proposals for future development.
    - half block adjacent to Century 21 building
    - northwest corner of Jackson and Hunter Streets.

General Land Use Character

- Downtown centered around Civic Square area.
  - Primary institutional, retail and office focus.
- Surrounded by fringe of high density mixed residential and commercial uses.
  - Numerous vacant parcels.
- Filtering out to low density residential, harbour and mountain.

PLANNED LAND USE

Number of Major Developments Recently Completed/Underway

- Eaton Centre.
- CIBC Tower.
- Sheraton Lakeview Hotel.
- Copps Coliseum.
- Standard Life Building.
- Piggot/Sun Life Condominiums.

Other Major Projects Planned/Possible

- New location for Regional headquarters.
- Waterfront redevelopment scheme.
- Lister block redevelopment.
- More intensive condominium development in core area.

Downtown Hamilton Viewed as Commercial Heart of Region (Central Area Plan)

- Policy to maintain core as commercial centre.
  - Primary commercial area for retail and office uses in City and Region.
- Encourage mixed use developments with residential component.
  - High density character.
- Future growth to be directed north and west of James and Main.
  - Area surrounding Civic Centre redevelopment zone.
- Scaling down of heights and densities away from the core area.
  - Include provisions for industrial-commercial uses and free-standing residential buildings.

ECONOMIC DEVELOPMENT POLICY/STRATEGY

- Hamilton-Wentworth's economic development strategy has a number of goals:
  - Target high growth industries in the service sector.
  - Target specific manufacturing industries that have high growth potential.
  - Retain existing industry by improving infrastructure, assisting firms with expansions, and ensuring that strategically located sites are available for relocations within the Region.
  - Attract people to live and work in the Region by means of an extensive marketing campaign and increased levels of public investment in facilities and amenities that enhance the quality of life in the Region.
  - Establish and fund a Hamilton-Wentworth Small Business Centre.
  - Promote Hamilton-Wentworth as the regional centre for southwestern Ontario.
- The Strategy emphasizes that better highway and commuter transit connections would:
  - Bring Hamilton-Wentworth within the Toronto commutershed, (thereby) attracting people and businesses to the Region.
  - Expand the sphere of influence of Hamilton-Wentworth as a Regional Centre.

(Source: Building on Strength - Realizing Opportunity: An Economic Strategy for Hamilton-Wentworth, June 1986).

* * * * *

In the following chapter, we provide our evaluation of the various alternatives, using the above information as our understanding of the existing economic situation within Hamilton.

III - EVALUATION OF ALTERNATIVES

In this final chapter we evaluate the alternative options for expanding GO Train service from Burlington to Hamilton. In the sections below we describe the evaluation methodology, the groups of alternatives evaluated, and the results of the evaluation process.

ASSESSING ECONOMIC EFFECTS

Assessing the specific effects of a transportation investment on an urban economy is extremely difficult. Economic development is the result of a complex interplay of various factors ranging from the investment climate, investor attitudes, public policy, and the specific nature of the proposed investment. Any attempt to isolate the effects of a proposed transportation must therefore be cautious and based on a thorough understanding of the existing situation.

Assessment Begins with Analysis of Existing Situation

Assessing the effects of the expansion of GO Train service to Hamilton begins with an analysis of the existing situation. As we have seen in Chapter II, Hamilton is experiencing a significant amount of employment growth in its downtown core, and a small amount of population growth in some areas of its downtown core. Current conditions are favourable to continued growth:

- Hamilton has an affordable housing market (both ownership and rental) characterized by strong price advantages over Toronto (and intervening areas) and a healthy supply.
- Hamilton offers the amenities of a major city.
- Hamilton has a strong supply of prestige office space.
- Hamilton's economy is restructuring from a specialized manufacturing base to a more diversified and service-based economy.

Next Step is to Identify Alternatives to be Analyzed

The economic assessment, unlike other areas of assessment, is not sensitive to the same level of detail in alternatives as say the construction cost assessment. To ensure an appropriate level of detail, we identified the following set of alternatives:

- Expand service along CN route to CN station.
  - 1 way only
  - 2 way partial service
  - Full Service.
- Expand service along CP route to CP station.
  - 1 way only
  - 2 way partial service
  - Full service.
- Other options.
  - Expand only to: Waterdown station
  - Expand to Kay Drage or King/Main
  - No improvement to existing service.

Next Step is To Establish Potential Zone of Impact

In order to focus the analysis, it is necessary to identify the potential zones in which the expansion of service might reasonably be expected to have an impact. By roughly assessing the travel times between residents and the potential station locations we were able to identify the area within which the stations might reasonably be expected to have an impact.

Since for most residents of Ancaster, Dundas, Flamborough and Stoney Creek, the Waterdown or Burlington stations are closer in distance and/or in total travel time, we concluded that the primary area of impact for either the CP or the CN alternatives will be within the City of Hamilton. Furthermore, for many of the residents on the Mountain, other stations (outside of downtown Hamilton) are easier to get to. (Although bus access from many parts of the Mountain to the downtown core is good). For these reasons, we identified the primary impact area of the CP and CN station alternatives as the downtown area.

For purposes of analysis, a 750 metre radius catchment zone was utilized since this represents the distance within which the stations would be a 10 minute walk away.

Next Step is To Hypothesize Possible Range of Impacts

Through interviews, comparative market analysis, and analysis of the role of the GO train service, we developed a series of hypotheses regarding the range of effects which might be brought about by the expansion of GO service. The fundamental change which service expansion might bring about is a change in people's behaviour. In particular, we tested the following hypotheses with respect to the service alternatives:

- Would people be more likely to live in Hamilton?
- Would people be more likely to work in Hamilton?
- Would people be more likely to visit Hamilton?
- Would people be more likely to shop in Hamilton?

OVERALL CONCLUSIONS

Expanding Service to Downtown Hamilton

Expanding service into downtown Hamilton will not result in major growth for the downtown core. There is no evidence that the lack of full service to Toronto is currently a barrier to Hamilton's development, and there is no evidence to suggest that service expansion will, by itself generate significant new growth. However, the economic base of Hamilton is tied to a certain extent to the economic base of Toronto, and one of Hamilton's attractive features as a place to live and work is that it is affordable, has the amenities and services of a major city and yet is within easy reach of Metro Toronto.

The overall impact of service expansion is likely to be:

- A relatively minor increase in the likelihood of people moving into Hamilton overall and/or a faster achievement of growth potential. Hamilton has the necessary conditions for growth, and improved service and accessibility would reinforce these conditions:
  - Improved accessibility to jobs in Metro, Peel and Halton combined with:

  - The relative affordability and ready supply of housing in Hamilton.
  - The relative amenities of a major downtown core.

- A relatively minor increase overall in the draw of major tourism attractions in the downtown core because:
  - Hamilton has unique, higher-order attractions (Copps Colliseum and Hamilton Place).
  - Hamilton's market area already extends to Metro & beyond.
  - Reliable convenient access could strengthen the draw.

- A relatively minor increase in the attractiveness of the downtown core to those businesses wishing or requiring a linkage to Metro:
  - Hamilton offers affordable prestigious space backed up by high quality business support services.

    Those most likely to be attracted as a result of service expansion are:
    - Toronto businesses or institutions considering the option of relocating to a less-congested but "downtown" location, but hesitating due to the problems of displacing employees.
    - Businesses considering the option of establishing regional offices but requiring good linkages to Peel or downtown Toronto due to the nature of their business and labour force.

- The activity generated by an inter-modal station could also stimulate localized redevelopment:
  - Particularly for localized convenience-oriented retail and service businesses.

Assessing the Differences Between the CN & CP Routes/Stations

The final step was to analyze the differences between the two basic station/route alternatives and levels of service alternatives. In order to establish an empirical basis for comparing the two basic station alternatives, we developed a series of measurements which quantify the latent potential within each of the catchment areas. These measurements included:

- Existing and potential population within 750 m of the stations: Existing population figures within the catchment areas were calculated. In cases where a zone was cut by the catchment radius, population was assigned to the zone on a pro-rated area basis. Potential population figures were calculated by taking the Ministry of Transportation and Communication's projections for the year 2011 (low scenario) and allocating them to the catchment area on a similar basis.

- Existing and potential employment within 750 m of the stations: Existing employment figures within the catchment areas were calculated as above. Potential employment figures were calculated by taking the Ministry of Transportation and Communication's projections for the year 2011 (low scenario) and allocating them as above.

- Existing commercial development within 750 m of the station: A rough estimate of the amount of commercial space within the catchment area of the CP station was obtained from the Hamilton Office Space Inventory (Chambers & Co., July 1987). This estimate includes office space only.

- Existing residential units within 750 m of the stations: Existing residential units were calculated by calculating the average persons per dwelling for the catchment area and dividing the total population by that figure.

- Potential residential and commercial development within 750 m of the station: These figures were calculated by:
  - Identifying vacant and significantly underutilized parcels within the catchment areas with the assistance of the local area planners.
  - Scaling lot sizes from land use/zoning maps.
  - Assuming the current zoning with respect to land use and densities.
  - Calculating development potential using full lot size multiplied by the permitted gross floor area (lot coverage).
  - To derive the number of potential residential units, an assumption of an average unit size of 1,000 square feet was made.

EXHIBIT III.1

SUMMARY OF DEVELOPMENT POTENTIAL* WITHIN 750M OF STATIONS

STATION	NEIGHBOURHOOD	RESIDENTIAL (units)	COMMERCIAL* (sq.ft.)
CN-750M	Northeast	10	-
	Northwest	-	-
	Beasley	-	370,000
	Central	210	233,000
	Total	220	603,000
CP-750M	Durand	547	185,000
	Corktown	-	326,000
	Beasley	470	1,450,000
	Central	-	1,785,000
	Total	1,017	3,746,000

For details regarding methodology for calculating development potential see text

- Commercial floorspace potential was discounted to 65% of maximum gross floor area permitted (on a parcel by parcel basis). This assumption was made because:
  - historically no development has been built to the maximum
  - maximum heights, lot sizes and floorplate efficiencies limit total size.
- Actual figures were used where a development proposal has been submitted.
- A summary of the development potential by neighbourhood is provided in Exhibit III.1.

- Tourist/Recreational attractions within 750 m of the stations: A simple count of the number and type of tourist and recreational attractions within the 750 metre catchment was made.

- Compatibility of station with Municipal Land Use and Development Policies: The potential station locations were reviewed with respect to the intent and specific land use policies contained within the local area plans.

- Compatibility with the Region's Economic Development Strategy: The stations were also reviewed with respect to the extent to which they reinforced the Region's economic goals.

A summary of our analysis is provided in Exhibit III.2. The analysis provided input to our final evaluation of the two station/route alternatives and the alternative levels of service.

Final Step Was To Differentiate Between Service Levels

The final step in our evaluation was to establish the differences in benefits between alternative levels of service. In general, the benefits of service expansion are more likely to be achieved as the level of service improves. However, more specifically:

- Improved 1-way service is likely to have no effect on economic development, with the possible exception of increasing the level of activity around the stations and stimulating local convenience service and retail businesses.

EXHIBIT III.2

Go Train Service Expansion Program - Analysis of Alternatives
Economic Development

CRITERIA	CP/TH&B STATION		CN STATION	
	EXISTING	POTENTIAL*	EXISTING	POTENTIAL*
• Population within 750 m of station	12,890	14,120	6,900	6,600
• Employment within 750 m of station	21,860	26,750	7,330	10,070
• Residential unit development within 750 m of station	±7,540	±8,560	±2,960	±3,180
• Commercial development within 750 m of station (includes office and retail commercial)	207,200 m² *** (office only)	±555,600 m²	Negligible	±55,700 m²
• Tourist/Recreational attractions within 750 m of station	6 (Copps Coliseum, Art Gallery, Football Hall of Fame, Convention Centre, Jackson Square, Hamilton Place)	8 (The 6 in existing + Theatre Aquarius and Eaton Centre)	0	1 (Waterfront Park)
• Compatibility of Terminal with Municipal Land Use/Development policies	Not applicable Terminal unused	Compatible	Compatible since already in use	Less compatible since not in development area

* Population and Employment Figures Based on Year 2011 Forecast

** Based on 65% of Maximum Permissable Floor Area Under Current Zoning

*** Source: Chambers & Co. Ltd., Hamilton Office Space Inventory, July 1987

- Partial 2-way service is likely to have a minor effect, since it will at least introduce the possibility of reverse flow (i.e, into Hamilton in peak hour rather than out of Hamilton). However, both tourists and some businessmen will be interested in convenience of service, and travel in off-peak hours.

- Full service will have the greatest effect. Full service would allow for a reliable, very convenient linkage between Hamilton and the major markets between Hamilton and Toronto. In addition, full service may have a greater psychological impact on investors for whom easy linkage to Toronto is important.

Overall Evaluation Indicates CP Route Has Greater Economic Development Potential

The evaluation of the CP and CN alternatives is provided in Exhibit III.3. In general, the CP full service alternative has the greatest economic development potential, while at the other extreme the CN improved one-way service will likely have no effect. CN full service also has economic development potential but not as great as CP full service.

- CP/TH & B Full Service would provide the highest level of service to the downtown core and would be the most likely of all the alternatives to increase the attractiveness of Hamilton as a place to live, visit and work. In addition, full service, in association with an inter-modal terminal, would be most likely to generate growth in local convenience-order businesses.

- CP/TH & B Partial 2-Way would likely stimulate/reinforce the economic development of the downtown core. By providing the opportunity for two-way flow, (i.e. people from Metro and Peel can come into Hamilton in the morning and leave at night), an opportunity is created.

- CP/TH & B Improved 1-Way is unlikely to have any effect on economic development although it may improve the convenience of the service for downtown users.

- CN Full Service would also benefit Hamilton although the distance to the major, downtown market and tourism/business destinations is greater than for the CP station. As a result, the potential for stimulating and/or reinforcing the development of the core is less than with the CP/TH & B Full Service alternative.

EXHIBIT III.3

Go Transit Service Expansion Program - Evaluation of Alternatives
Economic Development

CRITERIA	CP/TH&B FULL SERVICE	CP/TH&B PARTIAL 2-WAY	CP/TH&B IMPROVED 1-WAY	CN FULL SERVICE	CN PARTIAL 2-WAY	CN IMPROVED 1-WAY
• Likelihood of increasing/ reinforcing the number of people moving to Hamilton	▪	•	—	▪	•	—
• Likelihood of increasing/ reinforcing the draw to major tourism attractions	●	•	—	▪	•	—
• Likelihood of increasing/ reinforcing attractiveness of the core to businesses	●	•	—	▪	•	—
• Likelihood of stimulating/ reinforcing localized redevelopment and convenience-order businesses	●	▪	•	▪	•	—

LEGEND

HIGH ⬤ ● ▪ • LOW   NO EFFECT —

- CN Partial 2-Way would have a similar impact to the CP/TH & B Partial 2-Way service, although the likelihood of stimulating localized redevelopment and convenience-order businesses is smaller, since the potential commercial retail market close to the station is smaller.

- CN Improved 1-Way is unlikely to have any effect on economic development, although it may improve the convenience of the service for downtown users.

Other Options

A number of other options were identified during the study process and reviewed with respect to their impact on economic development.

- Not expanding service. If GO service is not expanded to downtown Hamilton, growth will likely continue, but at a slower pace, especially in the future if congestion along the QEW/403 increases and makes it difficult for people to live in Hamilton and commute to Peel or Metro Toronto.

- Extending service to Waterdown Station. Extending service to Waterdown only will not assist downtown Hamilton, but it could reinforce the already strong population growth and residential development in Ancaster, Dundas and Flamborough.

- Extending service to Kay Drage or King/Main. While both Kay Drage and King/Main potential station locations offer a reasonable proximity to the downtown and potentially good access to Highway 403, they do not have the same potential as the CP station to reinforce the development of the downtown core.

Appendix D

Report on Intermediate Level of GO Transit Service - CP

REPORT
ON INTERMEDIATE LEVEL OF
GO TRANSIT RAIL COMMUTER SERVICE
BETWEEN HAMILTON JUNCTION AND HUNTER STREET STATION

CP RAIL - EAST
TORONTO, APRIL 1988

EXECUTIVE SUMMARY

Canadian Pacific provided GO Transit with a December 1986 Study which identified rail plant improvements required to implement Limited and Full Commuter Service to Hamilton, on CP trackage between Hamilton Junction and Hunter Street Station.

On February 29, 1988, GO Transit requested that additional simulations be conducted to identify Intermediate levels of service that may be accommodated without construction of an additional main track(s) on the CP route option.

In consultation with GO Transit, three Intermediate service levels were simulated with the following results:

(1) Schedule A - Twelve (12) GO movements, comprised of three (3) AM peak period trains each way per day and three (3) PM peak period trains each way per day, with schedule identified in Table 1.

This Intermediate level of service can be accommodated on CP trackage without the construction of an additional main track between Hamilton Junction and Hunter Street Station.

Plant improvements identified for Limited Service in the December 1986 Study, must be carried out prior to implementation of this Intermediate level of service.

(2) Schedule B - Twenty (20) GO movements, comprised of Schedule A and one (1) additional AM peak period train and seven (7) off peak period trains, with schedule identified in Table 2.

This Intermediate level of service cannot be accommodated on CP trackage without the construction of an additional main track between Hamilton Junction and the west portal of the Hunter Street tunnel. The additional main track and plant improvements identified for Limited Service in the December 1986 Study, must be carried out prior to implementation of this Intermediate level of service.

(3) Schedule C - Sixteen (16) GO movements, comprised of Limited Service schedule and two (2) AM and two (2) PM peak period contra-flow trains, with schedule identified in Table 3.

This Intermediate level of service with schedule simulated, cannot be accommodated on CP trackage without the construction of additional rail plant. The expected total delay to freight movements, at future freight service levels, as a result of CP to GO conflicts at the single track Hunter Street tunnel is not acceptable to CP. Construction of an additional main track between Hamilton Junction and the west portal of the Hunter Street tunnel will not reduce the expected total delay to CP movements to an acceptable level.

An acceptable Intermediate level of service is dependent upon the required commuter service schedule. The desired schedule will determine the period of time which the corridor is dedicated to commuter service and freight movements not permitted, in order to ensure the integrity of the passenger schedule. The number of commuter trains which can be physically operated in the corridor is a secondary factor.

This Report was conducted on the basis that there would be no adjustment to freight operations to accommodate a commuter service. Given the dynamic nature of the railway business and outside concerns which impact on CP, GO is cautioned that the acceptability of an Intermediate level of service is conceptual in nature and CP retains the right to review the required plant changes. Should this report progress to a design study, further operational and planning analysis may be required.

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1.0 INTRODUCTION

It is the desire of GO Transit to provide rail commuter service from Oakville / Burlington to Hamilton by extending the GO Lakeshore service currently operating on the CN Oakville Subdivision.

In this regard, GO requested CP Rail to investigate the feasibility of operating rail commuter service on CP trackage from Hamilton Junction to Hunter Street Station.

Manual simulations were carried out and a December 1986 Study submitted for two operating scenarios:

(1) Limited Service - Six peak period commuter trains departing Hamilton in the AM and six peak period commuter trains arriving Hamilton in the PM. The Limited Service schedule, which is appended to this Report, was simulated with present freight schedules and future, Generation 1 and Generation 2, freight schedules. Under this GO operating scenario, no additional main tracks were determined to be required.

2 Full Service - Comprised of 54 GO movements, 50 revenue and 4 non-revenue trains in each day. Present freight schedules and future, Generation 1 and Generation 2, freight schedules were simulated against the Full Service schedule.
Under this GO operating scenario, one additional main track was identified to be required between Hamilton Junction and Main Street (there is presently two main tracks), and the Hunter Street tunnel is required to be reconstructed to accommodate two main tracks (there is presently one main track).

In February 1988 GO Transit requested that additional simulations be conducted with the intent that an acceptable Intermediate level of service, with contra-flow service to Hamilton, be identified.

The schedules simulated are as follows:

Schedule A - Three revenue movements each way in the AM and three revenue movements each way in the PM, during the peak period. A total of 12 movements.

Schedule B - Schedule A above plus one additional AM peak period train and off peak GO service throughout the day. A total of 20 movements.

Schedule C - Limited Service schedule (previously simulated in December 1986) with the addition of two AM peak period contra-flow trains and two PM peak period contra-flow trains. A total of 16 GO movements.

Results of the simulations are presented in the following sections of this Report.

2.0 SCHEDULE A

Table I illustrates the GO schedule between Hamilton Junction and Hunter Street Station. The scheduled times commenced and terminated at Hunter Street Station for all simulations. It is assumed that the overnight storage yard in Hamilton will be located east of the Station.

Three train sets will be stored at Hamilton overnight. The 900 series commuter trains identified in Table I are present GO trains that operate to and from the CN Hamilton James Street North Station.

TABLE I

SCHEDULE A

FROM HAMILTON				TO HAMILTON			
GO TRAIN	HAMILTON JUNCTION	TH&B STATION		GO TRAIN	HAMILTON JUNCTION	TH&B STATION	
954	0642	0634	FROM STORE	1	0755	0802	TO STORE
958	0703	0655	"	3	0820	0827	"
964	0727	0719	"	5	0845	0852	"
2	1643	1635	"	973	1742	1749	"
4	1708	1700	"	977	1824	1831	"
6	1733	1725	"	981	1908	1915	"

Total = 12 revenue trains.

2.1 Results of Simulations - Schedule A

Three manual simulations were performed for Schedule A and identified as follows:

Simulation A - Present level of freight operation and rail commuter service Schedule A.

Simulation A1 - Present level of freight operation plus Generation 1 growth in freight volume, which is described in detail in the December 1986 Study and rail commuter service Schedule A.

Simulation A2 - Present level of freight operation plus Generation 1 and 2 growth in freight volume, which are described in detail in the December 1986 Study, and rail commuter service Schedule A.

Simulation A

Simulation A indicated that freight movements would incur a total delay of 42 minutes over a 24 hour period.

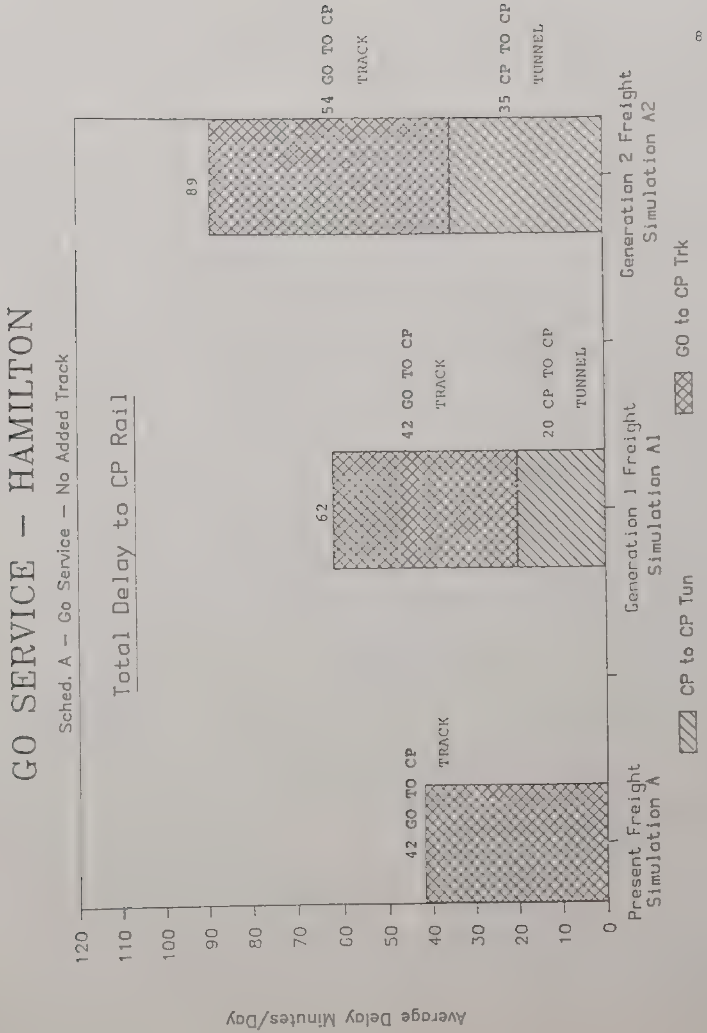
Simulation A1

Simulation A1 indicated that freight movements would incur a total delay of 62 minutes over a 24 hour period. This is an increase of 20 minutes over Simulation A and is a result of CP to CP conflicts at Hunter Street tunnel.

Simulation A2

Simulation A2 indicated that freight movements would incur total delay of 89 minutes over a 24 hour period. This is an increase of 47 minutes and 27 minutes over Simulation A and A1 respectively. The total delay of 89 minutes is comprised of 54 minutes account CP to GO conflicts and 35 minutes account CP to CP conflicts.

Figure 1 summarizes the total delay to freight movements that are expected with implementation of rail commuter service Schedule A.



2.2 Conclusion - Schedule A

With Schedule A Intermediate level of service, total delay to CP freight movements does not exceed that identified for Limited Service in the December 1986 Study.

Providing rail plant improvements identified for Limited Service are implemented, Schedule A Intermediate level of service can be accommodated between Hamilton Junction and Hunter Street Station.

3.3 SCHEDULE B

Table II illustrates the 20 GO movements between Hamilton Junction and Hunter Street Station.

This schedule provides 7 AM peak period trains, 6 PM peak period trains and 7 off peak trains. The schedule initiates and terminates all trains at Hunter Street Station for the purpose of simulation. It is assumed that the overnight storage yard in Hamilton will be located east of the Station. Three train sets will be stored at Hamilton overnight.

The 900 series commuter trains identified in Table II are present GO trains that operate to and from the CN Hamilton James Street North Station. Schedule B is a modification of Schedule A, in that 12 of the 20 movements operate as per Schedule A.

TABLE II

SCHEDULE B

	FROM HAMILTON				TO HAMILTON		
GO TRAIN	HAMILTON JUNCTION	TH&B STATION		GO TRAIN	HAMILTON JUNCTION	TH&B STATION	
954 A	0642	0634	FROM STORE	1 A	0755	0802	TO STORE
958 A	0703	0655	"	3 A	0820	0827	"
964 A	0727	0719	"				
2	0908	0900		5 A	0845	0852	
4	1308	1300		7	1148	1155	
6	1508	1500		9	1348	1355	
8 A	1643	1635		11	1548	1555	
10 A	1708	1700	FROM STORE				
12 A	1733	1725	"	973A	1742	1749	TO STORE
14	1858	1850		977A	1824	1831	
				981A	1908	1915	TO STORE
				13	2148	2155	"

Total = 20 revenue trains.

A = The letter A beside the train number represents the 12 GO trains in the A Schedule.

3.1 Results of Simulations - Schedule B

Three manual simulations were performed for Schedule B and identified as follows:

Simulation B - Present level of freight operation and rail commuter service Schedule B.

Simulation B1 - Present level of freight operation plus Generation 1 growth in freight volume and rail commuter service Schedule B.

Simulation B2 - Present level of freight operation plus Generation 1 and 2 growth in freight volume, and rail commuter service Schedule B.

Simulation B

Simulation B indicated that freight movements would incur a total delay of 73 minutes over a 24 hour period.

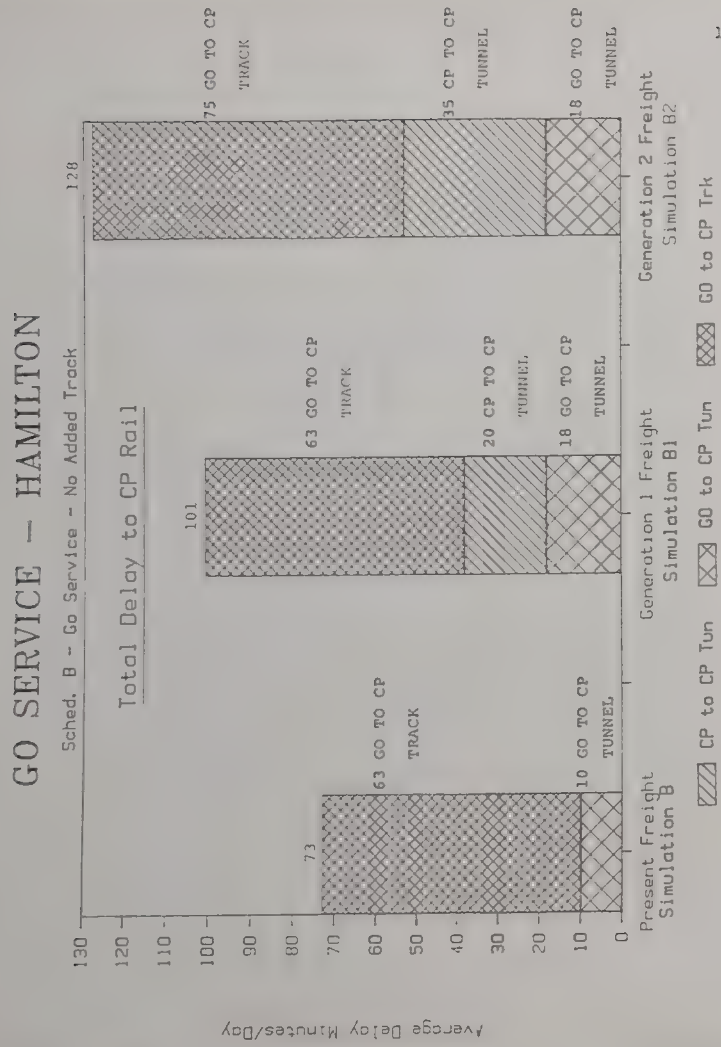
Simulation B1

Simulation B1 indicated that freight movements would incur a total delay of 101 minutes over a 24 hour period. This is an increase of 28 minutes over Simulation B and is a result of CP to CP and GO to CP conflicts at Hunter Street tunnel.

Simulation B2

Simulation B2 indicated that freight movements would incur total delay of 128 minutes over a 24 hour period. This is an increase of 55 minutes and 27 minutes over Simulation B and B1 respectively. The total delay of 128 minutes is comprised of 75 minutes account GO to CP conflicts related to track capacity between Hamilton Junction and Main Street and 53 minutes account GO to CP conflicts at Hunter Street tunnel.

Figure 2 summarizes the total delay to freight movements that is expected with implementation of rail commuter service Schedule B.



3.2 Conclusion - Schedule B

With Schedule B Intermediate level of service, total delay to CP Generation 2 freight movements exceeds that identified for Limited Service in the December 1986 Study.

Providing rail plant improvements identified for Limited Service are implemented and an additional main track is constructed between Hamilton Junction and the west portal of Hunter Street tunnel, Schedule B Intermediate level of service can be accommodated between Hamilton Junction and Hunter Street Station.

4.0 SCHEDULE C

Table III illustrates the sixteen (16) GO movements between Hamilton Junction and Hunter Street Station.

This schedule provides for Limited Service schedule and two (2) AM and two (2) PM peak period contra-flow trains. The schedule initiates and terminates all trains at Hunter Street Station for the purpose of simulation. It is assumed that the overnight storage yard in Hamilton for the six (6) train sets will be located east of the Station. Two (2) train sets will be stored at Hamilton during the daytime, in place for PM service to Union Station.

TABLE III

SCHEDULE C

FROM HAMILTON			TO HAMILTON		
GO TRAIN	HAMILTON JUNCTION	TH&B STATION	GO TRAIN	HAMILTON JUNCTION	TH&B STATION
2	0605	0557 FROM STORE			
4	0645	0637 "			
6	0705	0657 "			
8	0715	0707 "			
10	0725	0717 "			
12	0755	0747 "	1	0730	0737 TO STORE
			3	0820	0827 "
14	1653	1645 FROM STORE	5	1742	1749 TO STORE
16	1728	1720 "	7	1802	1809 "
			9	1811	1818 "
			11	1822	1829 "
			13	1858	1905 "
			15	1922	1929 "

Total = 16 revenue trains.

4.1 Results of Simulations - Schedule C

Three manual simulations were performed for Schedule B and identified as follows:

Simulation C - Present level of freight operation and rail commuter service Schedule C.

Simulation C1 - Present level of freight operation plus Generation 1 growth in freight volume and rail commuter service Schedule C.

Simulation C2 - Present level of freight operation plus Generation 1 and 2 growth in freight volume, and rail commuter service Schedule C.

Simulation C

Simulation C indicated that freight movements would incur a total delay of 82 minutes over a 24 hour period. GO to CP conflicts at Hunter Street tunnel comprised 57 minutes of the 82 minutes of total delay.

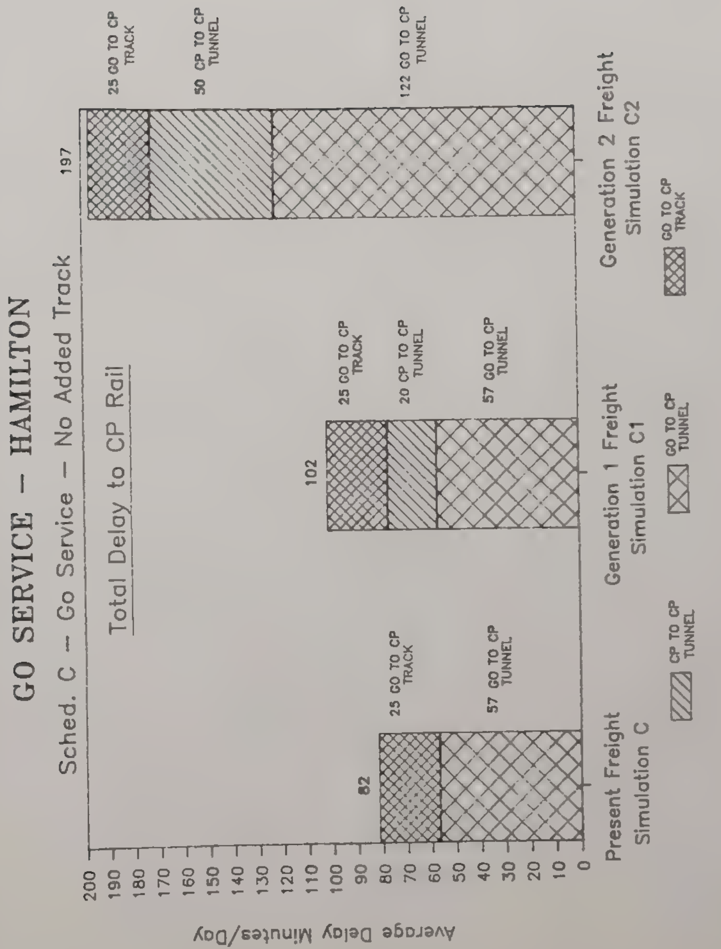
Simulation C1

Simulation C1 indicated that freight movements would incur a total delay of 102 minutes over a 24 hour period. This is an increase of 20 minutes over Simulation C and is a result of CP to CP conflicts at Hunter Street tunnel.

Simulation C2

Simulation C2 indicated that freight movements would incur total delay of 197 minutes over a 24 hour period. This is an increase of 115 minutes and 95 minutes over Simulation C and C1 respectively. The total delay of 197 minutes is comprised of 25 minutes account GO to CP conflicts related to track capacity between Hamilton Junction and Main Street, 122 minutes account GO to CP conflicts at Hunter Street tunnel and 50 minutes account CP to CP conflicts at Hunter Street tunnel.

Figure 3 summarizes the total delay to freight movements that is expected with implementation of rail commuter service Schedule C.



4.2 Conclusion - Schedule C

With Schedule C Intermediate level of service, total delay to CP Generation 2 freight movements exceeds that identified for Limited Service in the December 1986 Study.

Rail plant improvements identified for Limited Service and an additional main track between Hamilton Junction and the west portal of Hunter Street tunnel, will not reduce the total delay to an acceptable level. Schedule C Intermediate level of service and CP Generation 2 freight volumes cannot be accommodated between Hamilton Junction and Hunter Street Station without reconstruction of the tunnel to provide for two main tracks.

APPENDICES

TABLE

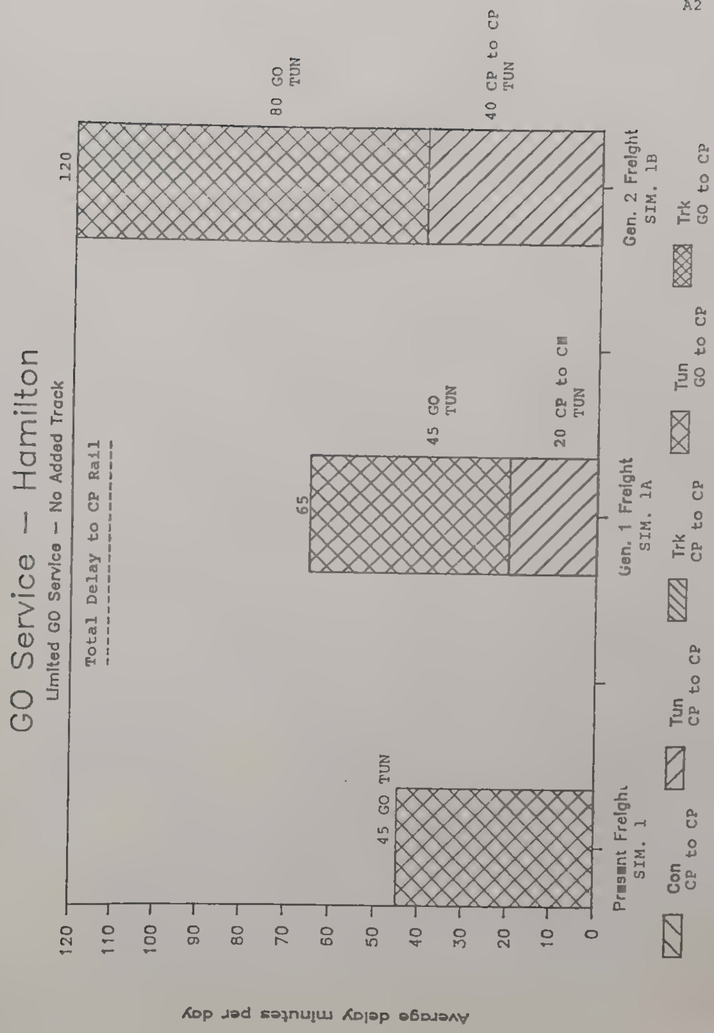
LIMITED SERVICE SCHEDULE

FROM HAMILTON			TO HAMILTON		
GO Train	Hamilton Junction	TH&B Station	GO Train	Hamilton Junction	TH&B Station
904	0605	0557	923	1740	1747
952	0645	0637	967	1800	1807
940	0705	0657	963	1809	1816
958*	0715	0707	969	1820	1827
954	0725	0717	971	1856	1903
956	0745	0737	973**	1920	1927

All trains, except those noted, are to be stored overnight in the Hamilton area.

* 958 arrives from Willowbrook as a non-revenue and commences revenue service at TH&B Station

** 973 returns to Willowbrook for storage after arrival at TH&B Station



CONSTRUCTION COSTS - LIMITED SERVICE

The following is a summary of the estimated construction costs, in 1986 dollars, to carry out the alterations and additions to the track and signal system to accommodate the introduction of Issue #4 (Limited) Rail Commuter Service on the CP Toronto Connection and TH&B into the TH&B Hunter Street Station in Hamilton.

	ITEM	ESTIMATED COST
1.	Grading for track relocation at Kay Drage Park GO Station site and for a segment of additional track due to realignment of track at Main Street. Also includes culvert extensions at Kay Drage Station site and fencing along the right-of-way from Hamilton Junction to Main Street.	$ 135,000
2.	Reballasting of the existing main tracks, Hamilton Junction to the east end of the platform at Hunter Street Station, including the respacing and renewal of ties.	700,000
3.	Renewal of the existing 100# - 105# bolted rail on the main tracks, Hamilton Junction to the east end of the platform at Hunter Street Station, with 136# CWR.	1,800,000
4.	Track realignment and approximately 300' of additional track at Main Street.	35,000
5.	New additional turnouts and replacement of 100# - 105# turnouts with 136# rail section occasioned by the rail renewal.	820,000
6.	Provision for switch heaters for the new and upgraded turnouts.	440,000
7.	Replace the ABS signal system on the CP Toronto Connection with a bidirectional CTC signal system to interface with the CN Oakville Subdivision and the TH&B Welland Subdivision. This is comprised of central office equipment and field cable plant and will include the portion of the TH&B between Main Street and the east end of Hunter Street Station.	960,000

	CTC signals along the CP Toronto Connection, interface with the CN at Hamilton Junction and at the new interlocking plants.	630,000
	Upgrade the existing CTC signals on the TH&B between Main Street and the east end of Hunter Street Station to display Rules 294 and 300. This will be comprised of field equipment and associated cable plant.	730,000
	(Above signal costs are exclusive of signal costs occasioned by the CN).	
8.	Provision only for trackage and turnouts at a GO train overnight storage yard. Location has not been determined.	1,200,000
Subtotal		$7,450,000
Engineering (10%)		745,000
Contingencies (10%)		745,000
TOTAL		$8,940,000
	SAY	$9,000,000

Refer to Appendix II, Attachment A for further details.

FULL SERVICE SCHEDULE - WEEKDAY

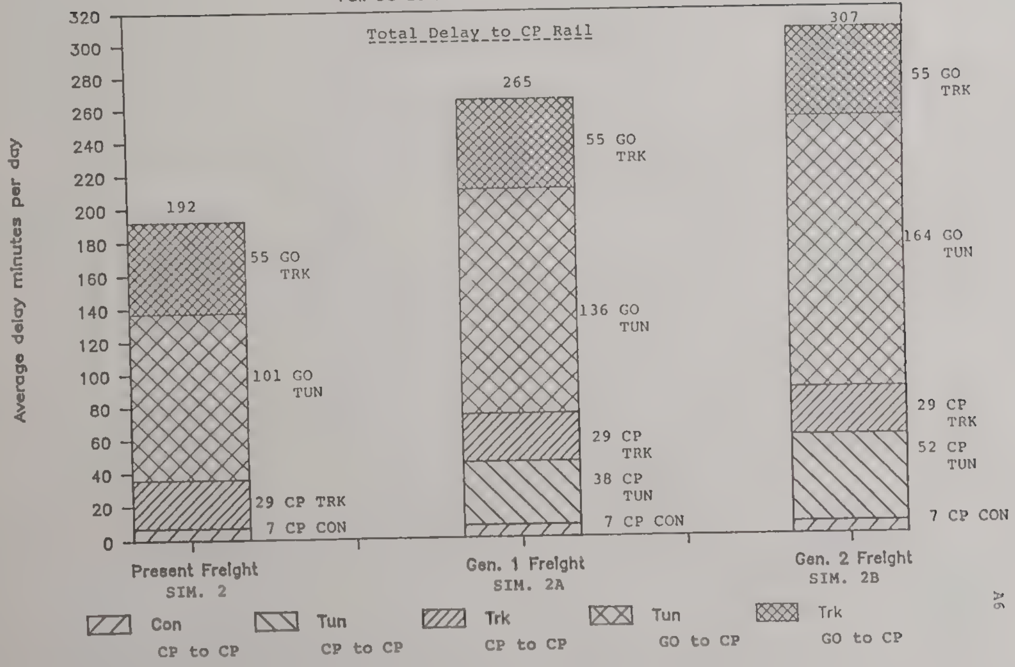
TO HAMILTON (WESTWARD)					FROM HAMILTON (EASTWARD)				
	DEPART —>		ARRIVE			DEPART —>		ARRIVE	
TRAIN	HAM JCT		HAM STN		TRAIN	HAM STN		HAM JCT	
			Hamilton Storage		904	0557		0605	—> A:
			Hamilton Storage		OE2	0617		0625	—> Wil
			Hamilton Storage		952	0637		0645	—> Wil
			Hamilton Storage		940	0657		0705	—> Wil
E957	0613		0620	—>	958	0707		0715	—> Wil
			Hamilton Storage		954	0717		0725	—> Wil
			Hamilton Storage		956	0737		0745	—> Wil
903	0740		0747	—>	908	0757	¦ ¦	0805	
949	0820		0827	—>	B: To Storage		¦ ¦		
905	0840	¦ ¦	0847	—>	910	0857	¦ H ¦	0905	
907	0940	¦ ¦	0947	—>	912	0957	¦ O ¦	1005	
A: 909	1040	¦ H ¦	1047	—>	914	1057	¦ U ¦	1105	
911	1140	¦ O ¦	1147	—>	916	1157	¦ R ¦	1205	
913	1240	¦ U ¦	1247	—>	918	1257	¦ L ¦	1305	
915	1340	¦ R ¦	1347	—>	920	1357	¦ Y ¦	1405	
917	1440	¦ L ¦	1447	—>	922	1457	¦ ¦	1505	
919	1540	¦ Y ¦	1547	—>	924	1557	¦ ¦	1605	
		¦From Storage B:		—>	972	1622		1630	
921	1640	¦ ¦	1647	—>	926	1657	¦ ¦	1705	
OE4	1725		1732	Hamilton Storage			¦ ¦		
923	1740		1747	—>	928	1757	¦ ¦	1805	
967	1800		1807	Hamilton Storage			¦ ¦		
963	1809		1816	Hamilton Storage			¦ H ¦		
969	1820		1827	Hamilton Storage			¦ O ¦		
925	1840		1847	—>	930	1857	¦ U ¦	1905	
971	1856		1903	Hamilton Storage			¦ R ¦		
973	1920		1927	Hamilton Storage			¦ L ¦		
927	1940	¦ H ¦	1947	—>	932	1957	¦ Y ¦	2005	
929	2040	¦ O ¦	2047	—>	934	2057	¦ ¦	2105	
931	2140	¦ U ¦	2147	—>	936	2157	¦ ¦	2205	
933	2240	¦ R ¦	2247	—>	938	2257	¦ ¦	2305	
935	2340	¦ L ¦	2347	—>	E935	2357		0005	—> Wil
937	0040	¦ Y ¦	0047	—>	E937	0057		0105	—> Wil
939	0140	¦ ¦	0147	—>	E939	0157		0205	—> Wil

26 Revenue Trains — 24 Revenue Trains

1 Non-Revenue Train (see E) — 3 Non-Revenue Trains

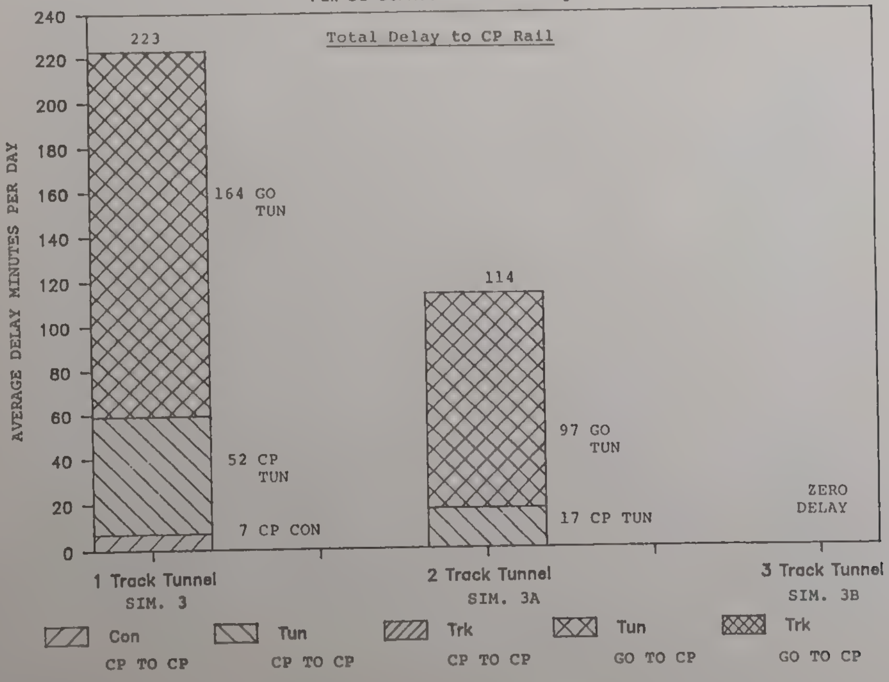
GO Service — Hamilton

Full GO Service — No Added Track



GO Service — Hamilton

Full GO Service — Gen. 2 Freight



CONSTRUCTION COSTS - FULL SERVICE

The following is a summary of the estimated costs in 1986 dollars, to carry out the alterations and additions to the track and signal system to accommodate Issue #3 (Full) Rail Commuter Service on the CP Toronto Connection and the TH&B, into the TH&B Hunter Street Station in Hamilton.

ITEM	ESTIMATED COST
1. Rail plant changes and additions identified for Issue #4 (Limited) service requirements. Exclusive of engineering and contingencies.	$ 7,450,000
2. CP Toronto Connection Section, additional interlocking plants, switch heaters at Hamilton Junction and Main Street, provision for an additional main track from Hamilton Junction to Main Street, associated signals (exclusive of CN signal costs), additional bridge, retaining walls, and the reconstruction/modifications to grade separations.	10,465,000
3. TH&B Section, additional interlocking plants, switch heaters, provision of an additional main track from Main Street through the Hunter Street Tunnel to Hunter Street Station, the extension of a main track from Poulette Street to the west portal of the tunnel, additional track and track changes at Hunter Street Station, and associated signals. Retaining walls, and the reconstruction of grade separations and the Hunter Street Tunnel to accommodate the additional trackage.	70,230,000
Subtotal	$ 88,145,000
Engineering (10%)	8,814,500
Contingencies (10%)	8,814,500
TOTAL	$105,774,000
SAY	$106,000,000

Refer to the Appendix III, Attachment A for further details.

Appendix E

Report on Intermediate Level of GO Transit Service - CN

CN REPORT UNAVAILABLE AT THIS TIME (DEC. 1, 1988)

Appendix F

Hunter Street Tunnel Report

Morrison Hershfield Limited
Consulting Engineers

GO TRANSIT SERVICE EXPANSION PROGRAM: BURLINGTON - HAMILTON STUDY

* HUNTER STREET TUNNEL *

Submitted to:

Mr. J. S. Sutherns
McCormick, Rankin & Associates Limited
60 Briarwood Avenue
Mississauga, Ontario
L5G 3N6

Report No. 1870318A

October 30, 1987

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Exhibit 3 - Tunnel Structure Clearance Diagram
Exhibit 4 - Typical Tunnel Cross-Section
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Exhibit 7 - Plan 1 Detour
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Exhibit 9 - Typical Cross-Section Showing Utilities
Exhibit 10 - Construction Schedule

1. INTRODUCTION

1.1 General

The Ministry of Transportation and Communications (MTC) is studying the feasibility of expanding GO rail service to Hamilton. Service expansion as far west as Burlington is currently being negotiated between GO Transit (GO) and CN Rail (CN). This study addresses the remainder of the west Lakeshore route from Burlington to Hamilton.

Two possible routes have been specified by the MTC. Both make use of the CN rail corridor from Burlington to Hamilton Junction. One route continues along the CN rail corridor into CN's Hamilton Station. The other route switches onto CP Rail's (CP) Toronto Connection and the Waterford Subdivision and terminates at the Toronto Hamilton Buffalo Railway (TH & B) Station in Hamilton.

The MTC has appointed McCormick Rankin & Associates Limited (MR) as the general consultant responsible for execution of the feasibility study, environmental assessment process, and preliminary design of the selected route. Morrison Hershfield Limited (MH) was retained by MR as a subconsultant to assess the feasibility and costs of expanding the existing Hunter Street Tunnel on the CP route to accommodate one additional track.

MH will also carry out the functional planning and costing of railway plant along each of the two routes in relation to a range of GO train service levels. MH will assess the feasibility of providing overnight storage facilities for GO equipment on both the CN and CP routes. The results of these tasks will be the subject of a separate report.

1.2 Objective

The objective of this report is to assess the feasibility of expanding the existing Hunter Street Tunnel to accommodate a second track.

At GO's request, CP conducted a study of GO service expansion to Hamilton, the results of which are contained in CP's report of December 1986, entitled "Study to Identify Plant Improvements in order to provide GO Rail Commuter Service Extensions to (Oshawa and) Hamilton Utilizing Segments of CP Rail Right-of-Way". The report concludes that if the level of GO service currently provided between Toronto and Oakville were extended to the TH & B Station in Hamilton, with trains operating at hourly intervals throughout the day, a second track would be required through the Hunter Street Tunnel. CP's report provided an order-of-magnitude cost of $72 million for a new tunnel structure, but without the benefit of any detailed investigation.

A range of GO service levels and the corresponding number of tracks required for each are explored in a separate report by MH. For the higher levels of service, it was found that a second track would be required through the tunnel.

This study was commissioned to assess the feasibility and costs of expanding the tunnel to accommodate the additional track required for the more intensive levels of GO service that will be evaluated during the course of the overall project study.

1.3 Approach

The portion of Hunter Street located over the tunnel is a main thoroughfare flanked by well kept commercial and residential properties in downtown Hamilton. As the tunnel is so close to the road surface, it is not possible for reconstruction to be accomplished without affecting street traffic and the properties fronting onto Hunter Street. The best realistic goal would be to choose a design and construction method that would minimize disruption to the community. In particular, local and emergency access to Hunter Street properties must be maintained at all times.

A further constraint is the need to keep the tunnel open to rail traffic throughout the construction period. Apart from providing access to local industry, the tunnel is on CP's main route to Buffalo. CP must retain the ability to transport time-sensitive cargos efficiently to prosper in a very competitive market.

This study explores various design alternatives and construction methods, seeking out and developing a concept that best meets these criteria, while keeping costs down to a minimum.

2. EXECUTIVE SUMMARY

The level of GO train service that can be provided along the CP route to the TH & B Station in Hamilton is governed by the ability to operate the required number of GO trains through the Hunter Street Tunnel.

The existing masonry tunnel is 595 m (1950 ft.) in length and was built in the late 1800's. Today, Hunter Street, a main City thoroughfare, runs directly above the tunnel for a distance of four city blocks, and is surrounded by residential and commercial properties. The single track in the tunnel is on CP's main route to Buffalo. Although in good structural condition, the tunnel does not have the necessary horizontal or vertical clearances currently required for two tracks.

In a separate report by MH, the capacity of the existing single track tunnel was measured in terms of GO service levels that it could accommodate within the framework of CP's freight operations. It was found that for the higher levels of GO service, a double track tunnel would be required.

This report investigates the feasibility of expanding the tunnel. The need to maintain both road and rail traffic during construction places severe restrictions on design and construction methods.

The solution proposed herein is to build a new structure around the existing tunnel. This would be accomplished by installing interlocking structural caissons to form the walls of the new structure. This would be followed by excavation along Hunter Street, down to the existing tunnel. The upper portion of the tunnel arch would also be removed from above, using a moveable steel liner inside the tunnel to safeguard railway operations. A poured-in-place concrete deck would be constructed with integral connections to the caisson walls. Hunter Street would be rebuilt on top of the new structure.

Construction would seriously disrupt traffic on Hunter Street, and several measures have been incorporated to cushion the effects of the work. Alternate routes would be provided for through traffic normally using Hunter Street.

Construction would generally be completed on a block by block basis so as to limit the extent of the work area at any given time. Temporary wood decking supported on steel girders would be used in the work area to maintain local and emergency access along Hunter Street. Work would continue throughout the winter to compress the overall construction schedule.

Final demolition of the lower portion of the old tunnel would be performed from track level inside the tunnel, as would construction of the new tracks and trackbed, with minimal effect on Hunter Street. Installation of a caisson liner, a cosmetic option, would also be performed inside the new structure.

The report concludes that it is feasible to construct a double track tunnel at an estimated cost of $38 million. The overall construction period would be just over two years.

The study is based on a permanent vertical clearance of 6.70 m (22'-0") from top of rail (22'-6" from base of rail) in the new tunnel, as indicated in a report by CP dated December, 1986. In a letter dated 24 September 1987, CP has revised their minimum vertical clearance to 7.92 m (26'-0") from top of rail (26'-6" from base of rail) to allow for possible future electrification. Because of the shallow (or lack of) cover over the tunnel deck slab, the additional clearance would have to be made up by a corresponding lowering of the track and foundation of the new tunnel, resulting in a maximum track gradient of 1.25% east of the tunnel and a considerable cost increase. It should be noted that the 7.92 m clearance is not available in the existing tunnel. The cost increases due to CP's increased clearance requirements are not included in this report but are currently being assessed.

3. EXISTING TUNNEL

3.1 General Description

Construction of the existing TH & B tunnel under Hunter Street was completed in 1895 by the open cut method. The total tunnel length is 595 m (1950 ft.). The upper portion of the tunnel consists of a 600 mm (2 ft.) thick brick arch with the exception of a 32 m section at the east end where the arch consists of a steel rib structure. The lower portion of tunnel consists of stone masonry. A 15 m long flat roof reinforced concrete extension was constructed at the east end in 1932. Superficial observation indicates that the tunnel is still in good structural condition.

The track maintains an even grade of 0.76% through the tunnel and beyond, while Hunter Street more or less follows the original ground level. Existing rail and road grades are illustrated in Exhibit 2. The road was constructed directly upon the tunnel arch for about 120 m at each end with as little as 100 mm of asphalt cover. The ground rises towards the centre of the tunnel, with a maximum cover of 6 to 7 m.

3.2 Clearances

The tunnel was originally constructed for double track which remained in place until 1953. A single track was then centred in the tunnel to satisfy the required clearances for the larger modern railway equipment. The existing tunnel is 7.9 m wide which is 1.2 m less than the width currently required for a two track tunnel. The required minimum 6.7 m vertical clearance above top of rail is not met by the existing tunnel except right at the centre of the arch.

It appears that difficulties have been experienced in the past in elevating Hunter Street and Park Street sufficiently to surmount the east end of the tunnel. As a result, the 1932 extension was built to a lesser vertical clearance than the remainder of the tunnel. At the west end of the tunnel there is a distinct bump in the profile of Queen Street where it crosses over the tunnel. Any new design should seek to minimize or avoid raising the tunnel roof above its present elevation.

4. RAIL ACCESS

4.1 Need to Maintain Rail Traffic

CP has clearly stated their requirement to continue operating trains through the tunnel during the construction period.

The tunnel is on CP's main route to Buffalo, and carries time-sensitive cargoes. Any degradation in the on-time performance of these trains would jeopardize CP's competitive position as a freight carrier. The tunnel also serves as a conduit between the Aberdeen freight yard and local Hamilton industries, including Stelco and Dofasco.

4.2 No Alternate Routes

Consideration was given to the feasibility of rerouting CP traffic during reconstruction of the tunnel, but the results are negative. There are no CP or CN lines that would offer an alternate route without serious degradation to main line freight train schedules.

For local industrial traffic, CP uses their Belt Line, which runs parallel to Gage Street, for access to the main industrial areas. Alternately, it would be physically possible to run from Aberdeen Yard along the Toronto Connection to the CN tracks at Hamilton Junction, reverse direction along the CN Oakville Subdivision through Hamilton Station, then proceed along CN's industrial spur towards Burlington Street.

Apart from the assumption that such a solution would be accepted by CN, it is at best a cumbersome, time-consuming detour, wholly dependent on CN's co-operation for expeditious handling of the CP trains. Such a procedure is definitely not recommended.

In balance, there appears to be no feasible alternative other than maintaining train operations through the tunnel during construction. However, some concessions would be required in terms of work blocks to allow for certain unavoidable tasks including tunnel demolition, track and signalling work. CP stated, in a letter dated 24 September 1987, that 4 hour daily work blocks could be made available during construction, under their existing operating schedules.

5. STRUCTURAL CONSIDERATIONS

5.1 Design Criteria

i) Minimum Clearance Dimensions

The tunnel design provides for the minimum clearances specified by the Canadian Transport Commission and as stated in CP's report dated December 1986. The required vertical clearance is 6.86 m (22'-6") from base of rail (22'-0" from top of rail). The required horizontal clearance for the two track tunnel is 9.05 m (29'-8 1/2"), i.e. 2.55 m (8'-4 1/4") from track centre line to nearest obstruction, and tracks at 3.96 m (13'-0") track centres (see Exhibit 3).

ii) Permanent Elevation Changes to Roads

Increases to the elevation of Hunter Street must be minimized since any changes would also affect all connecting streets. Such changes could alter local drainage patterns and cause local flooding. Elevation changes could also create undesirable grades for driveways and entrances to residences.

iii) Emergency Access

Emergency access must be provided to allow ambulance, fire and police services to respond quickly and effectively to any emergency occurring along Hunter Street while construction is in progress.

Minimum criteria for providing such access are the following:

a) A surfaced pedestrian walk must lead to the front door of each residence.

b) Emergency vehicles must have use of a road not less than 3.75 m wide to allow such vehicles to be driven to within 75 m of the main entrance of any building along Hunter Street.

c) All fire hydrants must remain operational and accessible during construction.

iv) Local Road Access

Local road access refers to private driveways and commerical and apartment building parking areas which currently have access off Hunter Street. It has been assumed that the criterion for providing local access is that driveways may not be cut off for more than 36 hours for any four week period during construction. Alternative parking must be arranged within 100 m of the driveway concerned.

v) Through Traffic Access

Hunter Street is a major westbound downtown throughfare. The through traffic must be maintained on Hunter Street during construction or a suitable detour must be implemented.

vi) Rail Traffic

No satisfactory route exists along which CP freight trains can be rerouted. Rail traffic must therefore be maintained through the Hunter Street Tunnel with minimal interruption during construction. For purposes of this study, however, it is assumed that a 4 hour block of work time could be made available daily at a time most convenient to CP.

vii) Construction Duration

The overall construction duration should be minimized to reduce the disruption to area residents and to traffic in general. In addition, the project should be scheduled so that construction is active only in one section of Hunter Street at a time. This would reduce the disruption to residents in any given section to a fraction of the total construction time.

viii) Construction Costs

The proposed tunnel construction, while meeting the above design criteria should have an optimal minimum cost when the construction costs and the future maintenance costs are considered.

5.2 Soil Conditions

Soils investigations have been carried out in the past for building projects adjacent to Hunter Street. These soil reports indicate the native material west of Bay Street to be primarily silty clay to silty clay till. At Bay Street and to the east the native material is cemented sand and gravel. The material in the immediate vicinity of the tunnel is reportedly fill material as can be expected from the open cut method of construction. These observations are corraborated by a newspaper article in the Hamilton Spectator, September 7, 1985 which recounts the construction of the existing tunnel. Excavation was done by steam shovel from Queen to Bay. East of Bay Street hard pan was encountered, and excavation had to be done by pick and shovel with the aid of explosives.

The soil reports show a perched water table in the fill. The existing tunnel appears to be dry. Sub-drains exist under the trackbed. Construction of a new tunnel with subdrains is not expected to cause any significant settlement problems due to drawdown of the water level.

A detailed soils investigation and geotechnical analysis would be required for the design of the new tunnel structure.

5.3 Design Alternatives

Several alternate designs were considered before selecting a method of constructing a new tunnel in a way that would best meet the design criteria discussed above. The existing arch configuration, and the masonry construction ruled out any possiblilty of modifying the existing structure to provide additional width or height.

Following is a brief description of the alternatives that were considered and discarded.

i) Open Cut Without Shoring

The existing tunnel was originally constructed in open cut without shoring. With the present day City development along Hunter Street, repetition of this method would not be feasible.

Hunter Street is built on a narrow (20 m) road allowance, and the substructures of many of the adjacent buildings extend out to the property line.

ii) New Single Track Tunnel Adjacent to Existing Tunnel

The TH & B tunnel centre line approximately coincides with the Hunter Street centre line. There is approximately a 4.5 m width available on each side of the existing tunnel within the Hunter Street road allowance. A new single track tunnel structure would be at least 6.5 m in width. A second tunnel structure could not be accommodated on either side of the existing tunnel without conflicting with existing parking garages and undermining building foundations.

Because of these complications this alternative was not pursued in any detail.

iii) Tunnel under Jackson Street

For a tunnel to be physically possible in this location (Refer to Exhibit 7 for Jackson St. location) it would require 10 degree curves and up to 2% grades. As this is not acceptable for CP main line traffic, it would restrict the use of this track to GO trains, eliminating the operating flexibility and therefore reducing the overall operating capacity through the tunnel section of the route. The tunnel would be 950 m long which is 60% longer than the existing tunnel. The track alignment would reduce City Hall parking and cut the park to the west of City Hall in half.

A major problem with this alternative is that the alignment would require the tunnel be dug immediately under existing houses west of Queen Street to rejoin the existing rail corridor with significant risk to the properties concerned.

Because of these complications and expected very high cost, this alternative was discarded.

5.4 Proposed Construction Method

The proposed construction technique that best meets the above criteria is a method widely used for subway construction. The new tunnel would be constructed around the existing tunnel with rail traffic maintained during construction. The walls of the proposed structure would consist of interlocking drilled reinforced concrete caissons. The slurry trench and diaphragm wall construction technique would be a viable alternative but does not appear to offer any cost savings over the caisson wall structure.

The roof of the new structure would be a poured-in-place concrete slab supported on the caisson walls (see Exhibit 4). The roof would generally follow the profile of Hunter Street to minimize the cost of backfilling over the structure. The track elevation would remain unchanged.

i) **Caissons**

The caissons would have a nominal diameter of 1.067 m with a 150 mm interlock. The interlock would be achieved by drilling every second caisson and then returning to drill infilling caisons. The infilling caissons would be reinforced with a reinforcing cage. The first set of drilled caissons would be reinforced by a wide flange steel section to reduce the possibility of conflict with the reinforcing when the infilling caissons are drilled for the interlock.

It appears that for the most part, the caisson wall would cut through the fill material behind the existing tunnel wall. Caissons would be founded 3 m below the existing tunnel on undisturbed material varying from stiff clay to cemented sand and gravel deposits. Of course, a detailed geotechnical investigation would be required to finalize the design of the new tunnel structure.

ii) **Temporary Timber Deck**

A temporary timber deck would be constructed so that emergency and local access is maintained along Hunter Street during construction. The timber deck would be supported by steel girders spanning between the caissons. The girders would also be utilized as struts to laterally support the caisson wall during excavation. If excavation to the top of the existing tunnel is deeper than 2 m, struts and whalers would be installed immediately above the existing tunnel for additional support.

The roof slab of the proposed tunnel would be poured-in-place prestressed concrete deck using a movable form. The top of the concrete deck would be approximately 1.2 m below the existing road surface where clearance allows. The temporary timber deck would remain in place while the permanent deck is poured.

iii) **Restricted Clearance at Tunnel Ends**

At the tunnel ends, there is as little as 700 mm between the required railway clearance and the Hunter Street surface. Therefore the standard design section must be modified as shown in Exhibit 5. The concrete slab would be reduced from 1000 mm thick to 900 mm thick in the centre and 750 mm thick at the edges. To accommodate the 900 mm thick slab, Hunter Street would have to be elevated by up to 600 mm at the east end and 400 mm at the west end (see Exhibit 2).

5.5 Raising of Hunter Street, Park to Bay

The new tunnel roof elevation would require Hunter Street to be elevated from Park to Bay by as much as 600 mm. Hunter Street presently climbs at the maximum design grade of 6% from Macnab Street to Park Street. Since the grade cannot be increased, it is proposed that Hunter Street would continue to climb at the 6% grade until it reached an elevation where it could surmount the new tunnel. This would require Hunter Street to be realigned at Park Street. The realignment would require a small amount of land from the Hamilton City Hall parking lot (see Exhibit 2). Park Street would also be elevated and realigned to intersect Hunter Street where it surmounts the tunnel. The Park Street realignment would require a small parcel of land from the school on the southwest corner. As an alternative to realigning Park Street, it could remain on its existing alignment and be closed at Hunter Street.

5.6 Raising of Hunter Street, Hess to Queen

To accommodate the increased height of the new structure, Hunter Street must be elevated approximately 400 mm from 40 m west of Hess Street over to Queen Street. To accommodate the required vertical curve over the new tunnel, Queen Street must be elevated approximately 400 mm for 25 m to the north and approximately 500 mm for 45 m to the south. This is illustrated in Exhibit 6.

6. ROAD ACCESS

6.1 Need for Through Traffic Detour

Hunter Street is a major westbound oneway throughfare. Due to the scope of the construction work it would be unrealistic to maintain Hunter Street as a viable route for through traffic until construction is completed. Alternate routing possibilities are therefore discussed in this section. This is no easy task, as the downtown streets are reportedly operating near full capacity now.

6.2 Existing Traffic Pattern

Based on traffic information provided by Hamilton Roads Department, the average week day traffic (AWDT) on Hunter is 9300 vehicles west of James and reduces to 1800 vehicles west of Queen. Hunter primarily carries traffic to major north and south routes with only 10% of the Hunter traffic continuing on west of Queen. The majority of the Hunter traffic exits to the north with 70% during the morning rush hour, and 50% during the afternoon rush hour.

6.3 Detour Routes

Two detour plans are proposed for Hunter Street through traffic. These plans are subject to discussion and approval by the City of Hamilton. Plan 1 would be implemented while Hunter is closed between Park and Bay. Plan 2 would be implemented when Hunter is reopened to through traffic up to Bay.

Plan 2 is much more convenient for Hunter Street through traffic. Also Plan 2 would minimize the impact Hunter Street traffic would have on the existing traffic pattern in the area by reducing the use of through traffic streets as detour routes. Therefore construction between Park and Bay should be completed as soon as possible for quick implementation of Plan 2.

Each plan has a separate detour route for Hunter traffic seeking a northbound route or a southbound route to minimize the detour distance and inconvenience. Expected traffic volume increases and required improvements are given in Appendix I on a street by street basis for streets utilized in detour Plans 1 and 2.

Plan 1 (See Exhibit 7)

The detour for traffic seeking a northbound route would direct the traffic north along John and west along King, both of which are major through roads. Local streets such as Hughson and Macnab are considered inadequate to carry the large traffic volumes required.

The detour for traffic seeking a southbound route would direct the traffic south along James and west along Duke to Queen.

Hunter traffic requiring access to Hunter Street west of Queen would be directed south along James, west along Duke, north along Hess, and then back to Hunter Street. At least one lane of Hunter must remain open for through traffic between Hess and Queen while Hunter is closed between Park and Bay, as the network of one way streets makes any alternative detour route extremely circuitous.

Plan 2 (See Exhibit 8)

Plan 2 would be implemented when Hunter is open to through traffic up to Bay. The traffic seeking a northbound route or continuing on Hunter west of Queen would be directed north along Bay and west along Jackson. Vehicles seeking a southbound route would be directed south along Park and west along Duke.

6.4 Cross Streets

Tunnel construction will necessitate closure or diversion of the following cross streets.

i) **Queen Street**

Queen Street is a major 3-lane southbound street which leads up the Mountain, carrying 11,300 vehicles per day. It is proposed a diversion be constructed along Queen so that a minimum of two lanes will remain open throughout construction. The diversion would be constructed on the east side of Queen within the City road allowance (see Exhibit 2).

ii) **Hess Street**

Hess Street is a 2 lane northbound one way street. The average daily traffic is 4,600 vehicles. Hess is the northbound one way street complementary to Queen carrying Mountain traffic to downtown. Hess only carries 40% of the traffic that Queen carries. Much of the northbound traffic from the Mountain goes east to Bay for a northbound route. It is therefore assumed that Hess Street may be closed for short periods of up to 48 hours during construction.

iii) **Caroline Street**

Caroline Street is a southbound one way street which carries 3,100 vehicles a day. Most of the southbound traffic in the area uses Queen. It therefore seems reasonable to assume that Caroline may be closed for short periods of up to 48 hours during construction.

iv) **Bay Street**

Bay Street is a 2-lane northbound one way street serving as a major throughfare. Much of the northbound traffic from the Mountain and from the general area uses Bay as the northbound route in preference to Hess. Bay carries over 9,500 vehicles a day. It is proposed a diversion be constructed so that at least 2 lanes of traffic be maintained along Bay throughout construction. The diversion would be on the east side of Bay and require a small amount of land from the school on the southeast corner and the small park at the northeast corner. Bay Street would be permanently widened by 2 m on the west side for a distance of 40 m to accommodate this diversion (see Exhibit 2).

7. UTILITIES

7.1 Existing Utilities

There are primarily four underground services which run along Hunter Street, including sanitary sewer, storm sewer, watermain and natural gas. All these services serve the local residents only with no trunk sewers or watermains along or across Hunter Street. The largest sizes are: sanitary sewer of 300 mm diameter, storm sewer of 375 mm diameter and watermain of 200 mm diameter. The location of existing telephone cables has not been clarified at this stage.

Between Hess and Queen sewer and water services are provided on each side of Hunter Street. The road surface is very close to the top of the tunnel preventing crossroad service connections. Between Bay and Hess the sanitary sewer and storm sewer run down the centre of Hunter Street, serving residents on both sides. Between Bay and Park only watermains exist. A 50 mm gas line with cross street connections serves residents along Hunter Street.

There is an overhead hydro line along the south side of Hunter Street, with service connections to buildings on both sides of the street. Street lights are mounted on the hydro poles along the south side of Hunter Street.

7.2 Utility Relocation

To construct the proposed tunnel structure all utilities, underground and overhead must be located outside the construction zone. It is assumed that all existing utilities will be relocated within the Hunter Street road allowance at least 0.5 m clear of the caisson wall. The remaining width available for the utility zone on each side of the street varies from 2 m to 3.5 m. Typically the utility zone on each side of Hunter Street would carry a sanitary sewer, storm sewer, watermain, natural gas line and underground hydro cable, as shown in Exhibit 9.

The new sanitary and storm sewers would be constructed at the same elevations as the existing sewers, i.e. at a depth of 3 m to 4 m to match existing connections to individual properties. Storm and sanitary sewers would be located in the same trench. During excavation of the sewer trench it may be necessary to take special measures to avoid disturbing the footings of houses built at the property line.

Installation of the caisson wall would require all overhead wires along Hunter Street to be removed. It is proposed that new cables would be placed underground along each side of the road to avoid the need for cross road service connections, leaving a clear path for tunnel construction. During construction, temporary poles would be required along the north side of Hunter Street to provide lighting and to allow for temporary overhead connections to buildings on the south side until the permanent cable was installed along with the other utilities on the south side of Hunter Street. When construction was completed, permanent street light standards would be installed on the south side of Hunter Street.

8. CONSTRUCTION SEQUENCE

8.1 General

Construction of the new tunnel could be substantially completed within a two year period with work continuing year round. The overall construction schedule is illustrated in Exhibit 10.

The construction sequence would be generally as follows:

- implement diversion route for through traffic
- relocate utilities
- drill and install caisson walls
- construct temporary road decking
- excavate Hunter Street down to and including the existing tunnel arch
- pour new roof slab
- remove temporary decking and place backfill over the new roof slab
- construct pavement, sidewalks, landscaping, etc.
- demolish and remove old tunnel walls working from track level
- build caisson wall liner inside tunnel
- construct new track bed and install new tracks

The various stages are discussed below, along with the likely impact on local residents. Completion of the work on a block by block basis should minimize local disruption. Particular emphasis should be given to early completion of the section from Park to Bay, as its availability would significantly reduce the inconvenience of the through traffic detour.

8.2 Preparation for Tunnel Construction

A two lane diversion must be constructed for both Bay Street and Queen Street at the appropriate time so that traffic along these streets would not be cut off during construction.

All utilities must be relocated out of the construction zone before caisson drilling can begin. Utility relocation requirements are discussed in Section 7.

The portion of Hunter Street around Park Street must be realigned prior to tunnel construction. The 1932 extension to the existing tunnel would be demolished prior to the new tunnel construction.

8.3 Access During Construction

Construction of the tunnel would require local access to be cut off temporarily in the immediate area of construction. Access to driveways would not be cut off for more than 36 hours during any construction stage. The underground parking entrance for 95 Hess Street and the entrance to CHCH-TV parking would not be cut off for more than six hours at night during any construction operation. Emergency access would be provided continuously during construction.

8.4 Tunnel Construction

The following stages would be carried out on a block by block basis.

Stage 1 - Caisson Wall Installation

Two drilling rigs would be utilized. Each has an expected progress rate of five caissons a day. A one metre deep trench would be dug prior to drilling. An unshrinkable backfill such as a weak concrete mix would be poured above the caisson cut off point to prevent utilities adjacent to the caisson wall from being undermined.

Local access would be cut off temporarily in the immediate area of caisson drilling. The drilling equipment would require the full road width, locally blocking off Hunter Street.

Stage 2 - Installation of Temporary Timber Deck

The top one to two metres of the Hunter Street surface would be excavated to install the timber deck. During excavation and installation of the steel girders and deck, local access would be temporarily cut off in the immediate vicinity. Steel girders would be placed at 2.5 m centres spanning between the caisson walls. The timber deck would be installed on the girders to provide local and emergency access.

Stage 3 - Soil Excavation and Tunnel Demolition

The soil above the existing tunnel would be excavated from above while the timber deck provides local and emergency access.

Prior to demolition of the existing tunnel arch, a steel arch liner would be installed inside the tunnel to protect the track from falling debris. The steel liner would be approximately 30 m long and be on rails to enable it to move along as demolition progresses. The brick arch could thus be demolished from above while rail traffic is maintained. The rubble from the brick arch would be brought to the street surface and loaded into trucks for removal. The tunnel walls would be excavated from the inside of the new structure at a later stage.

Stage 4 - Placement of the Prestressed Concrete Roof Deck

Most of the timber deck would be left in place during the construction of the concrete roof slab. Small sections of the timber deck would be removed in the immediate area of the concrete pour. The timber deck surface would be approximately 1.2 m above the roof slab surface to allow clearance for the steel girders above the poured concrete.

At the tunnel ends, clearance restrictions would not allow the timber deck to be at the original road elevation while maintaining a clearance between the poured concrete and temporary girders. It is proposed that the timber deck surface would be elevated as much as 1.5 m above the existing road surface between

Park Street and Bay Street to provide the required clearance for the temporary girders. This solution could not be used between Hess Street and Queen Street because a number of driveways require access to the timber deck. To reduce the amount by which the timber deck must be elevated above the existing road, it is proposed to encase the steel girders in the roof slab structure. This would reduce the maximum amount of elevation of the timber deck over the existing road from 1,600 mm down to 700 mm which would facilitate access to the various driveways.

Stage 6 - Backfilling

After the roof slab has hardened the temporary deck would be removed and a granular backfill would be placed to build Hunter Street up to the required elevation for asphalt surfacing. Local access would again be cut off in the immediate vicinity of the backfilling operation.

Stage 7 - Roadwork and Site Cleanup

Roadwork includes construction of sidewalks, curbs and gutters, and asphalt pavement. Site cleanup includes restoration and landscaping of neighbouring properties.

Stage 8 - Demolition of Old Tunnel

The construction of the new tunnel structure would be complete at this stage. The remainder of the existing tunnel walls and foundation would then be excavated from inside the new tunnel structure.

To demolish the walls of the old tunnel, the existing track must be moved 1.5 m to one side of the tunnel to maximize working room. When the rubble from the old tunnel has been excavated from the one side, a new track and track-bed would be constructed on that side including new sub ballast. The rail traffic would then be switched over to the new track. The remaining rubble from the old tunnel would be excavated from the other side and the second new track and track-bed would be built.

8.5 Disruption to Area Residents

The total construction time is estimated to be 29 months. As illustrated in Exhibit 10, construction would proceed on a block by block basis as follows.

i) Park to Bay

Utility relocation would begin during the first spring. Caisson drilling and tunnel construction would proceed through the summer and fall. Roadwork and site cleanup would be completed during the next spring and summer. Two lanes of through traffic would be routed on Hunter Street when the roof deck is complete. The disruption to traffic along this block would last 15 months.

ii) Bay to Caroline

Utility relocation would begin during the first spring. Caisson drilling would begin in the fall of that year and construction would proceed through the winter and following spring. Roadwork and site cleanup would be completed during the following summer. The disruption to residents along this block would last 15 months.

iii) Caroline to Hess

Utility relocation would begin during the first spring, followed by caisson drilling that fall. Construction of the temporary timber deck and excavation would not begin until the following spring. Roadwork and site cleanup would be completed that fall. The disruption to residents along this block would last 20 months.

iv) Hess to Queen

Utility relocation would begin during the second summer of construction. Construction would proceed through the winter. Roadwork and site cleanup would be completed the following summer. The disruption to residents along this block would last 15 months.

8.6 Disrupton of Cross Streets

The following cross streets would be disrupted during the tunnel construction.

i) **Park Street**

Park Street would be cut off from Hunter Street during construction of the tunnel from Park to Bay. The duration would be about nine months

ii) **Bay Street**

A diversion would be constructed for Bay Street so that two lanes would be open continuously throughout construction.

iii) **Caroline Street and Hess Street**

These streets would be closed for up to two days during each of the following operations:

- utility relocation
- caisson wall drilling
- temporary timber deck placement
- concrete deck placement
- road construction

iv) **Queen Street**

A diversion would be constructed so that two lanes would remain open at all times. Queen Street would be narrowed from 3 to 2 lanes for much of the 15 months of the tunnel construction between Hess and Queen. During this time, Queen Street would be elevated as proposed.

9. RESTORATION OF HUNTER STREET

Hunter Street would be restored to its preconstruction condition with a 10 m wide roadway and 1.5 m wide concrete sidewalks adjacent to the road. No overhead utilities would exist after construction. Aluminum light poles would be installed along the south side of Hunter Street for street lighting. Any lawns damaged during construction would be restored with topsoil and sod. Any trees or shrubs damaged during construction would be replaced.

10. CONSTRUCTION COST ESTIMATE

The estimated cost of the new 585 m long tunnel as shown in Exhibit 2 is $38 million dollars. A breakdown of the costs is given in Table 1. The estimate reflects 1987 construction costs and is based on straight day shifts. A premium has been included for the restricted working conditions in the downtown location. The cost estimate includes all foreseeable costs associated with construction of the tunnel from mobilization of construction crews through to restoration of properties in the tunnel vicinity.

The one exception to this is the cost of the new track and track-bed in the tunnel. This cost will be estimated separately as part of the overall route evaluation.

Two contractors were consulted in preparing the tunnel cost estimate. The one contractor is experienced in cut and cover construction with subway construction experience in Toronto. This contractor estimated the cost of installing a temporary timber deck, excavation, demolition of the existing tunnel and construction of the concrete roof slab. The other contractor specializes in drilling caisson walls and estimated that cost. A 10% contractor's markup was included in the caisson price since this work would likely be a subcontracted as part of a general construction contract.

The cost estimate is for a tunnel with the clearances stated in Section 5.1 and shown in Exhibit 3. In a letter dated 24 September 1987, CP has increased their vertical clearance requirements to 7.92 (26'-0") from top of rail to allow for possible future electrification. Also mentioned was GO's corresponding minimum clearance of 7.39 m (24'-3"). Any cost increases associated with these requirements are not included. The additional costs of providing the increased vertical clearance are currently being assessed and will be presented at a later date. It should be noted that the vertical clearance for electrification is not available in the existing tunnel.

TABLE 1
Construction Cost Estimate

SITE PREPARATION	
Utilities Relocation:	$ 1,889,000
Traffic Detours (Signs and Signals):	$ 330,000
TUNNEL CONSTRUCTION	
Mobilization, Contractor's Site Overhead, etc.:	$ 1,750,000
Caisson Wall:	$ 6,711,000
Caisson Wall Liner:	$ 536,000
Temporary Decking, Steel Work and Trackwork:	$ 3,210,000
Excavation:	$ 1,125,000
Demolition of Existing Tunnel:	$ 5,033,000
Prestressed Concrete Roof Slab including Wales and Struts:	$ 5,446,000
SITE RESTORATION AND CLEANUP	
Road Construction including Granular Backfill, Asphalt, Curb and Gutter, Sidewalk; Temporary Roads, Temporary Sidewalks; Property Restoration; Property Purchase:	$ 1,288,000
SUBTOTAL:	**$27,318,000**
20% Contingencies:	5,464,000
	$32,782,000
15% Engineering:	4,917,000
TOTAL ESTIMATED COST:	**$37,699,000**
	Say $38 million

11. CONCLUSION

A feasible method of construction is presented herein whereby the existing Hunter Street Tunnel can be replaced with a new structure with sufficient clearances to accommodate two tracks. The estimated construction and construction-related cost is $38 million in 1987 dollars.

While it would not be possible to carry out the work without any disruption to rail and road traffic, or to the local residents and properties, the proposed design is directed at minimizing the impact of construction.

The nature of the measures suggested to limit the disruption caused by construction of the new tunnel make it theoretically possible to implement the project at any time. The option thus provided for deferring tunnel reconstruction introduces the opportunity to postpone the choice as to what the ultimate level of GO service might be. Thus an initial daily service of say 6 or 12 GO trains could be implemented without reconstructing the tunnel. The two-track tunnel could eventually be constructed when the demand for increased GO service reaches the threshold beyond which two tracks would be required. It should be noted, however, that progressive increases in the number of trains using the tunnel coupled with increased development and traffic in the area could make constructing the tunnel more difficult in the future.

MORRISON HERSHFIELD LIMITED

A TORK

A. Tork, P. Eng.

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D. M. Amm, P. Eng.

APPENDIX I

EFFECTS ON AND UPGRADING OF DETOUR ROUTES

Each street to be used as a detour route is listed below together with estimated traffic volumes and required improvements. The streets are grouped as local or through streets since the effects of the detour would be quite different for each group.

I Local Streets

Many of the local streets are not wide enough to carry the expected detour traffic while maintaining present on-street parking. Removing some of this on-street parking would have an impact on the area since most of this parking is utilized during business hours.

Due to the increased traffic on these local streets, traffic signals may have to be installed at major cross streets. Some of the intersections where traffic signals are proposed may be found to be adequately controlled using an all-way stop. This would require a more detailed traffic analysis which is beyond the scope of this report.

The following local streets are part of a detour route.

Duke Street

Duke Street is a 9 m wide westbound one way street. Land use along Duke Street is primarily residential with some high-rise development.

Increased traffic volume: Duke Street would be required to carry an additional traffic volume of up to 3,700 vehicles per day while Plan 1 is in effect. The additional traffic would be reduced to approximately 2,400 vehicles when Plan 2 is implemented.

Parking: To allow 2 lanes of through traffic between James and Queen parking would be eliminated on one side of the street between Caroline and Queen.

Traffic Control: Traffic signals would likely be required where Duke crosses Bay, Caroline, Hess and Queen.

Jackson Street

Jackson Street is a two way street which is 12 m wide between Bay and Caroline and 9 m wide between Caroline and Queen. Highrise apartments and the backs of commercial buildings facing Main, dominate the streetscape along Jackson.

Traffic volume increase: Jackson traffic could increase by 2,900 vehicles per day between Bay and Hess and 1,050 vehicles per day from Hess to Queen.

Parking: Metered parking would have to be removed on the north side of Jackson between Bay and Hess so that two through lanes of westbound traffic could be maintained in this section. Since over 60% of the Hunter traffic using Jackson would turn onto Hess, only one westbound lane would be required beyond Hess.

Traffic Control: Traffic signals would likely be required along Jackson at Caroline and Hess.

Park Street

Park Street is a southbound one way street which is 9.5 m wide. Land use along Park is residential with a mixture of single dwellings and apartments.

Traffic volume increase: Traffic could increase by 2,700 vehicles per day when Plan 2 detour is implemented.

Parking: Parking would be prohibited on one side of the street between Hunter and Duke so that two lanes of southbound through traffic could be maintained.

Traffic control: Duke should be made the stop street at Park.

II Through Streets

Many of the through traffic streets in the vicinity of Hunter Street are at or near capacity. The addition of Hunter traffic could cause some delays for traffic on these streets. The following through traffic streets are part of a detour:

James Street

James Street is a four lane southbound one way street which goes up the mountain. The average daily traffic could increase by as much as 3,700 vehicles when the Plan 1 detour is implemented.

John Street

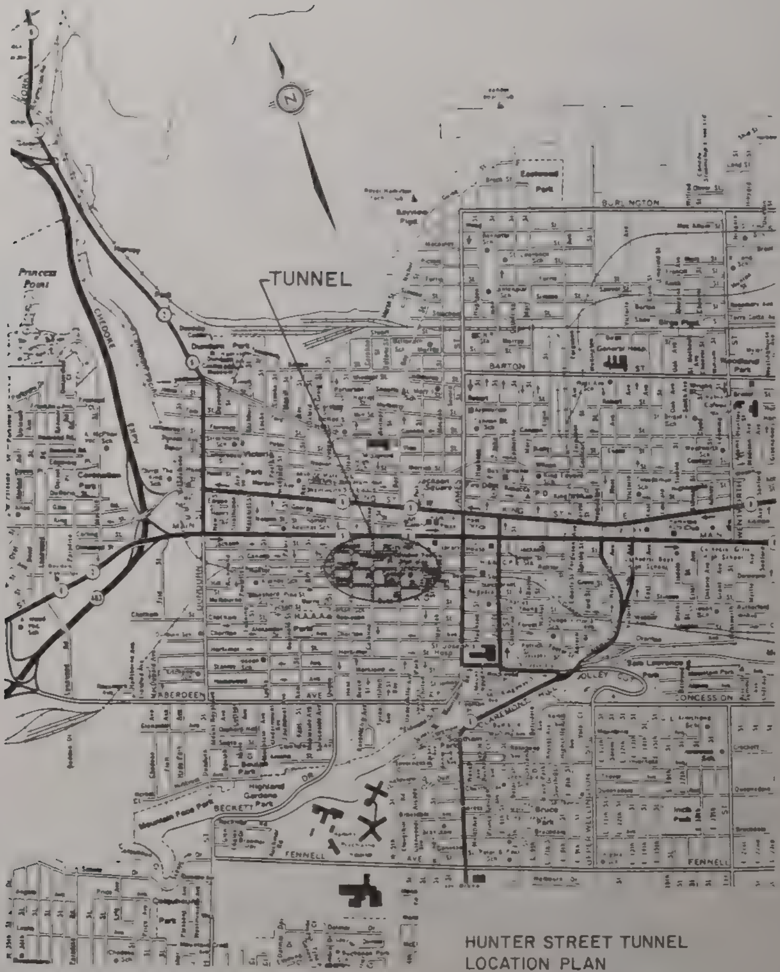
John Street is a four lane northbound one way street. The average daily traffic could increase by up to 4,700 vehicles when Plan 1 of the detour is implemented.

King Street

King Street is the major westbound street through downtown Hamilton and leads to Highway 403. The average daily traffic could be increased by up to 4,700 vehicles between John and Bay and 1,900 vehicles from Bay to Hess when Plan 1 of the detour is implemented.

Bay Street

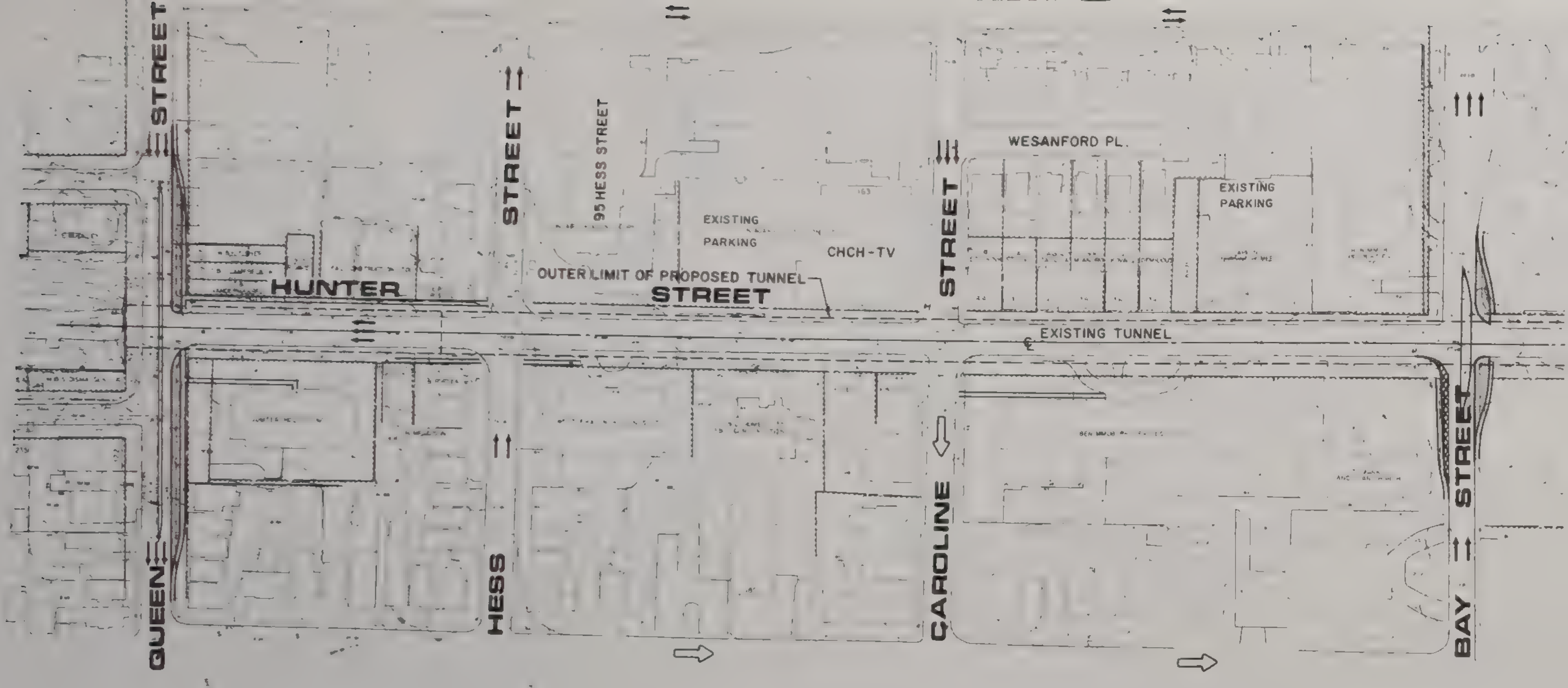
Bay Street is a three lane northbound one way street. The average daily traffic could increase by 2,900 vehicles when Plan 2 detour is implemented.

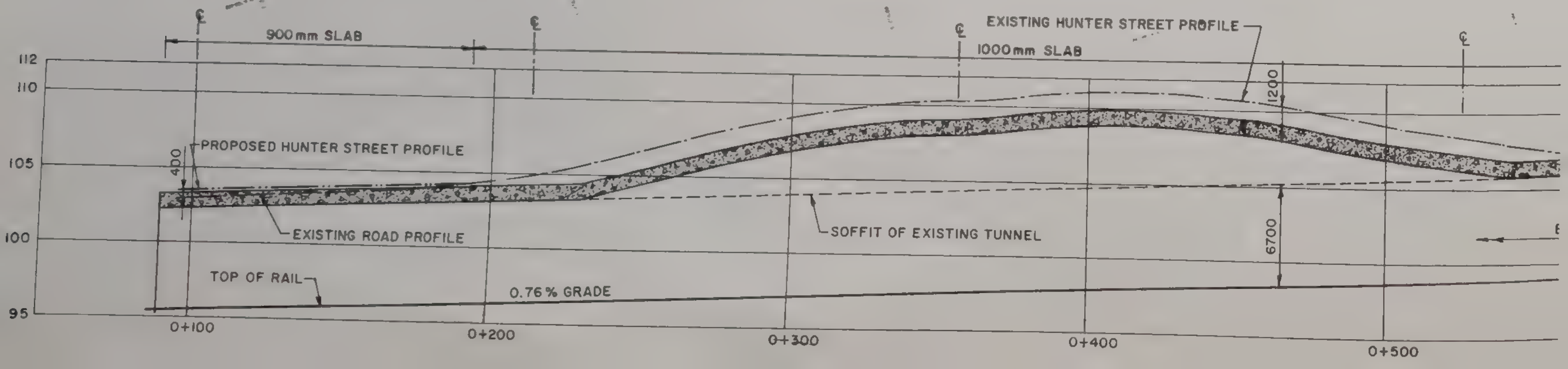


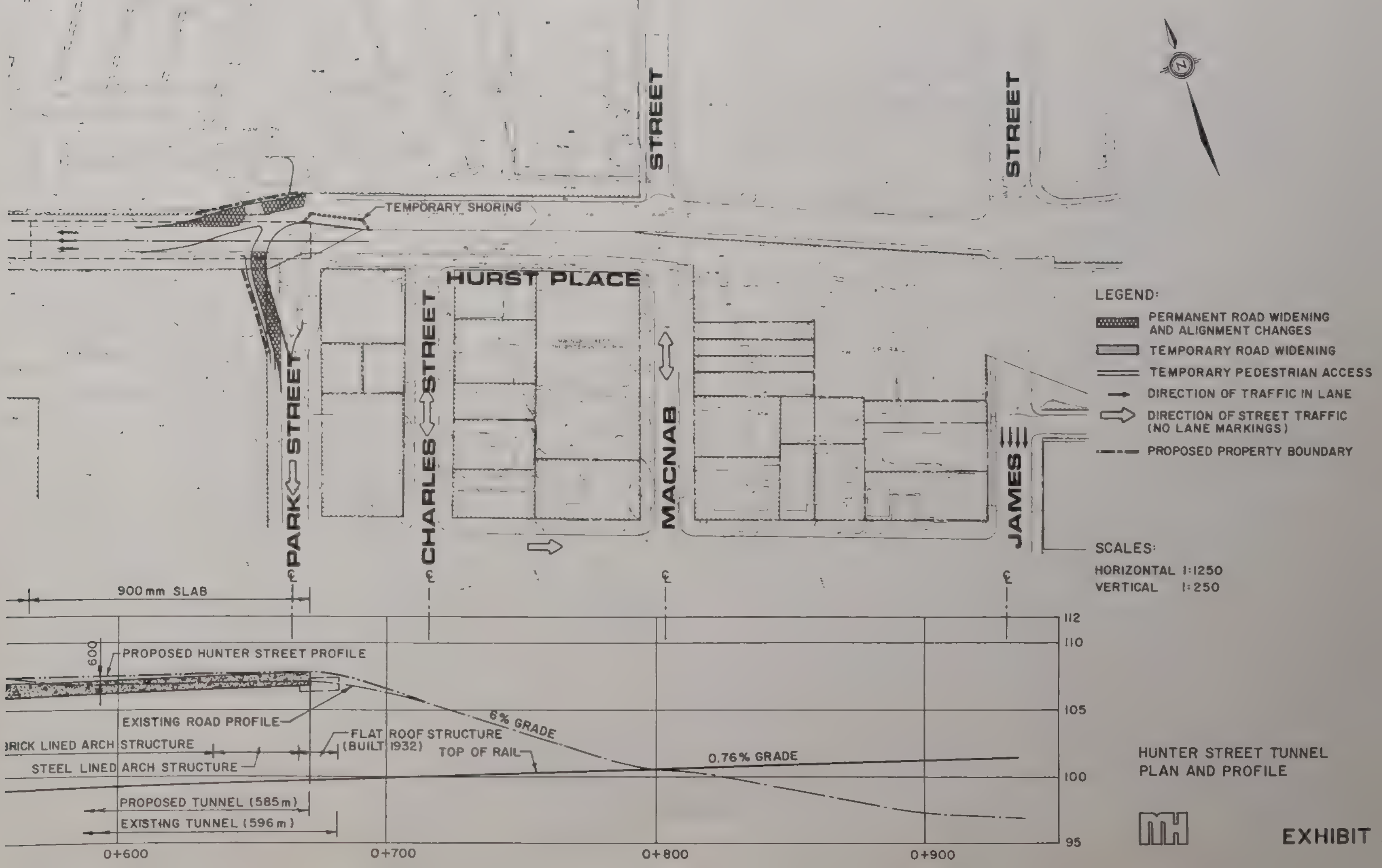
HUNTER STREET TUNNEL
LOCATION PLAN

CITY OF HAMILTON

EXHIBIT I

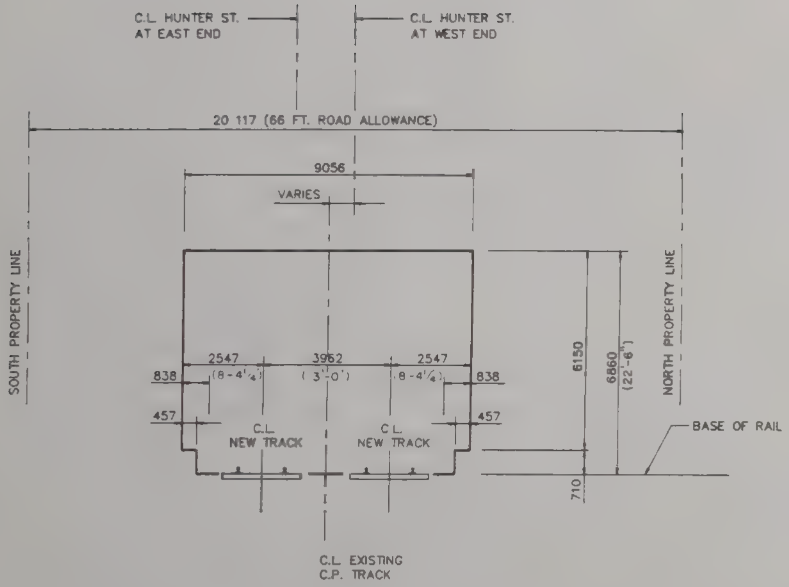

QUEEN STREET
HESS STREET
95 HESS STREET
WESANFORD PL.
EXISTING PARKING
CHCH-TV
EXISTING PARKING
CAROLINE STREET
BAY STREET
HUNTER STREET
OUTER LIMIT OF PROPOSED TUNNEL
EXISTING TUNNEL


900mm SLAB
1000mm SLAB
EXISTING HUNTER STREET PROFILE
PROPOSED HUNTER STREET PROFILE
EXISTING ROAD PROFILE
SOFFIT OF EXISTING TUNNEL
TOP OF RAIL
0.76 % GRADE
400
1200
6700
112
110
105
100
95
0+100
0+200
0+300
0+400
0+500


TEMPORARY SHORING
STREET
STREET
HURST PLACE
PARK STREET
CHARLES STREET
MACNAB
JAMES
LEGEND:
▨ PERMANENT ROAD WIDENING AND ALIGNMENT CHANGES
▭ TEMPORARY ROAD WIDENING
═ TEMPORARY PEDESTRIAN ACCESS
→ DIRECTION OF TRAFFIC IN LANE
⇨ DIRECTION OF STREET TRAFFIC (NO LANE MARKINGS)
—·— PROPOSED PROPERTY BOUNDARY
SCALES:
HORIZONTAL 1:1250
VERTICAL 1:250
900 mm SLAB
600
PROPOSED HUNTER STREET PROFILE
EXISTING ROAD PROFILE
6% GRADE
BRICK LINED ARCH STRUCTURE
STEEL LINED ARCH STRUCTURE
FLAT ROOF STRUCTURE (BUILT 1932)
TOP OF RAIL
0.76% GRADE
PROPOSED TUNNEL (585 m)
EXISTING TUNNEL (596 m)
112
110
105
100
95
0+600
0+700
0+800
0+900

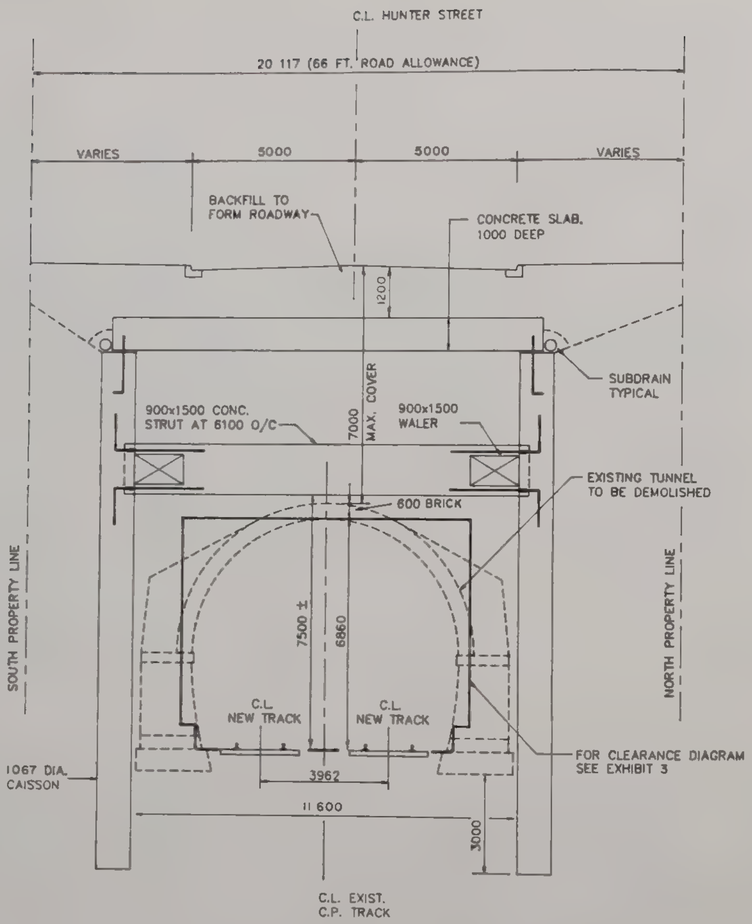
HUNTER STREET TUNNEL
PLAN AND PROFILE

EXHIBIT 2



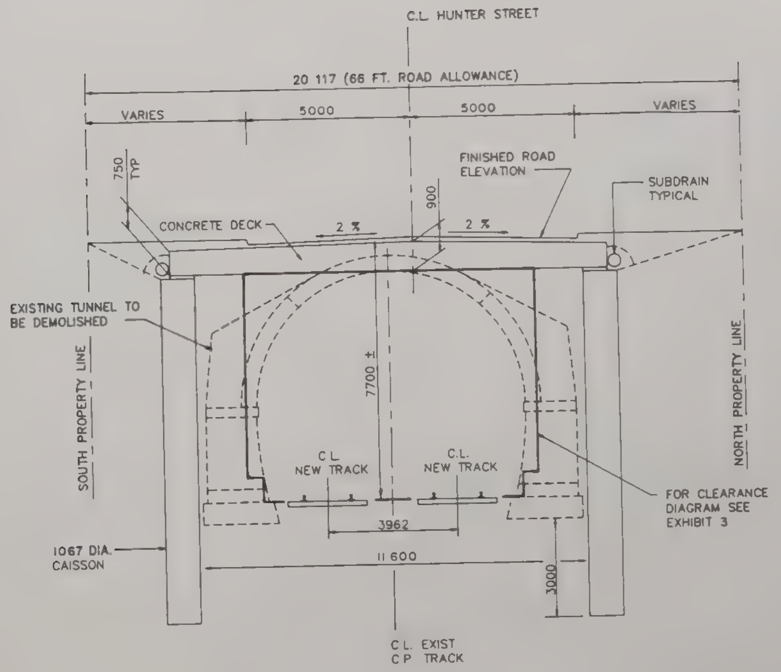
TUNNEL STRUCTURE
CLEARANCE DIAGRAM

EXHIBIT 3



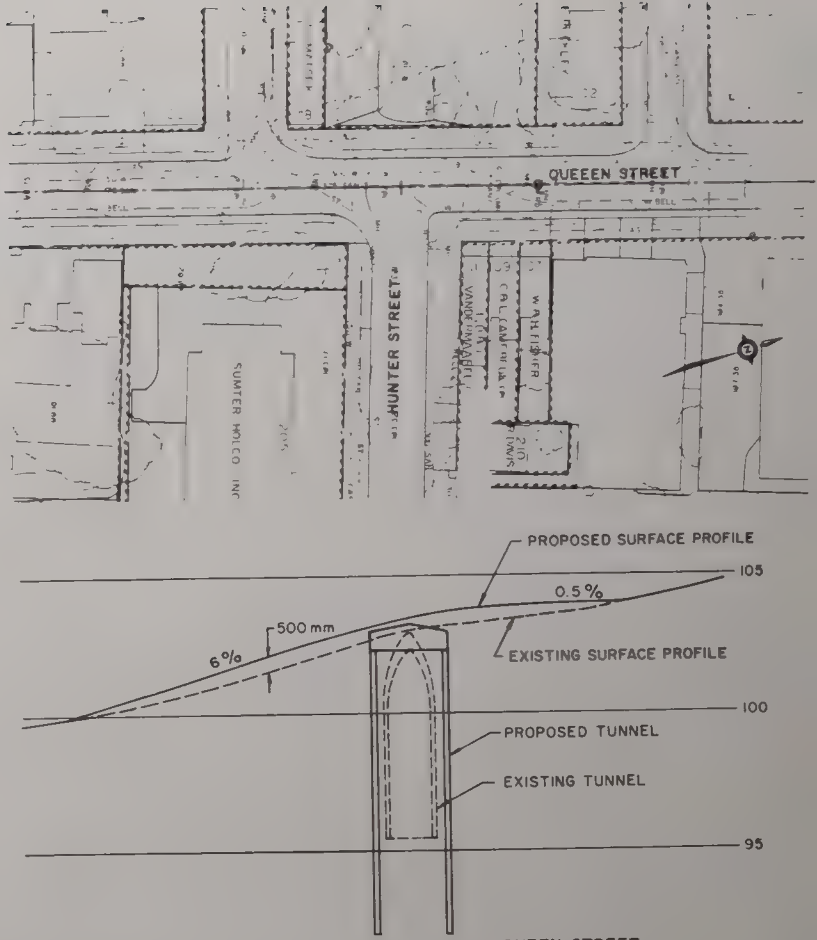
TYPICAL TUNNEL
CROSS SECTION

EXHIBIT 4



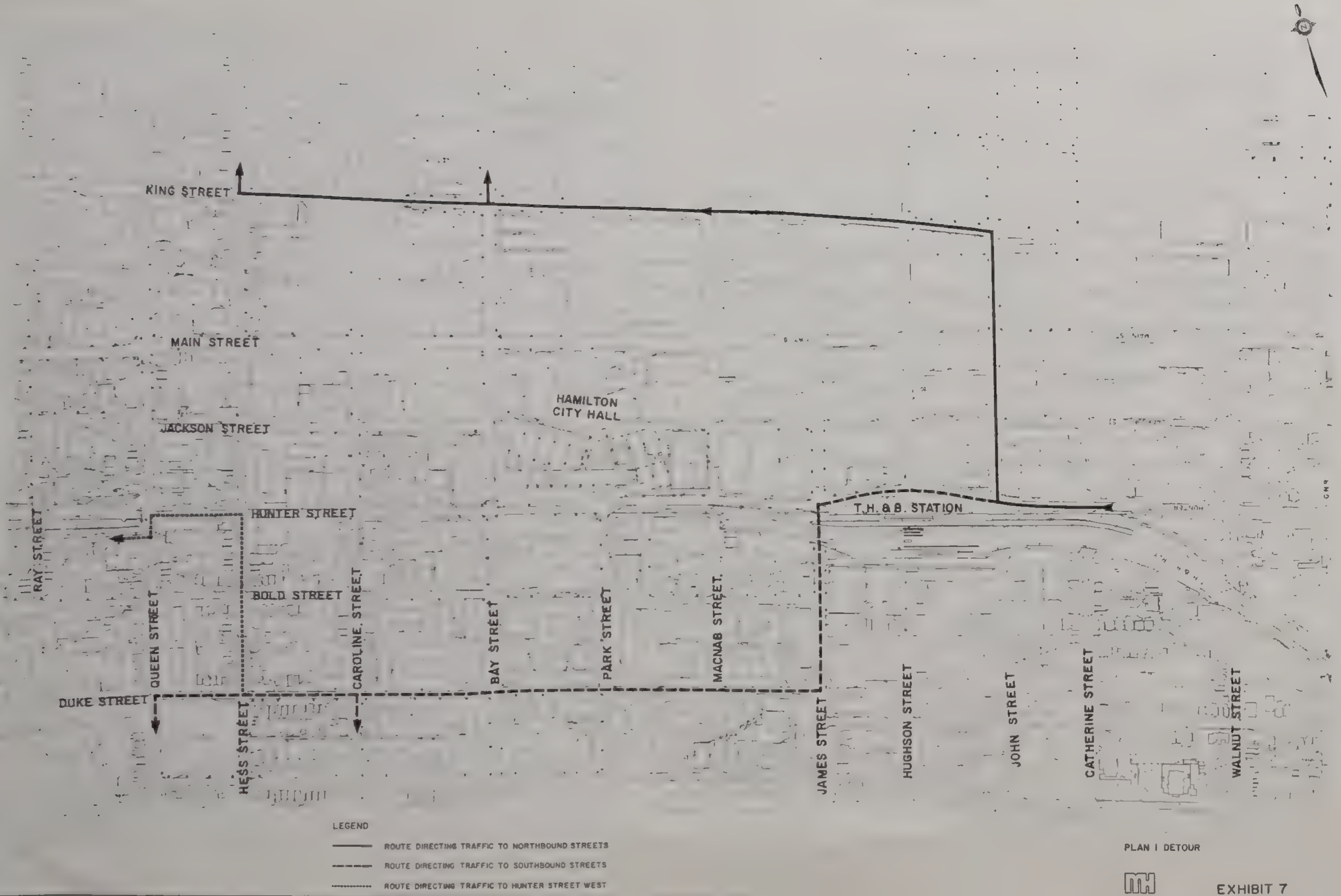
TYPICAL TUNNEL CROSS SECTION
IN AREAS OF LIMITED CLEARANCE

EXHIBIT 5



QUEEN STREET
PLAN AND PROFILE

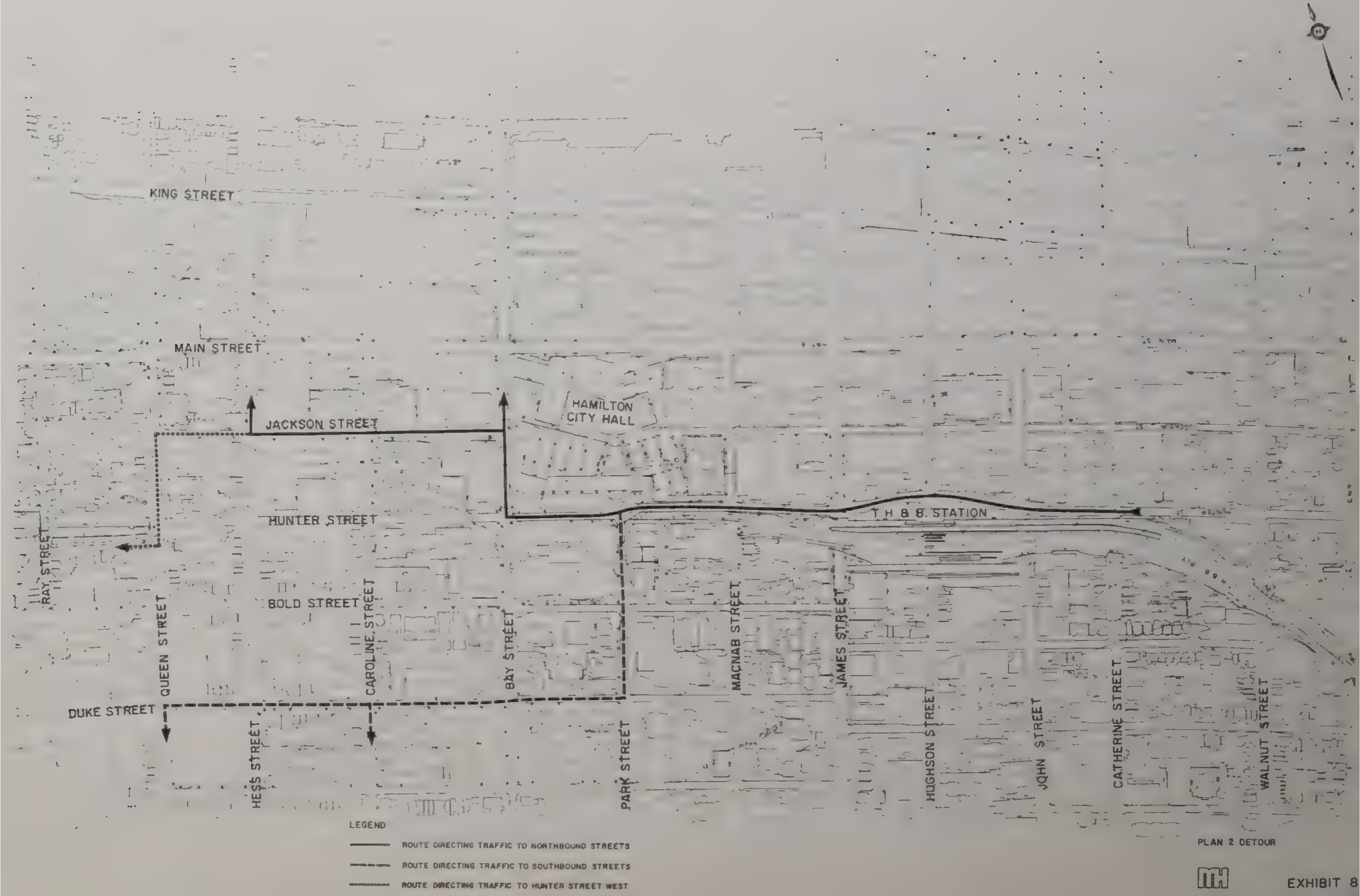
EXHIBIT 6



PLAN I DETOUR

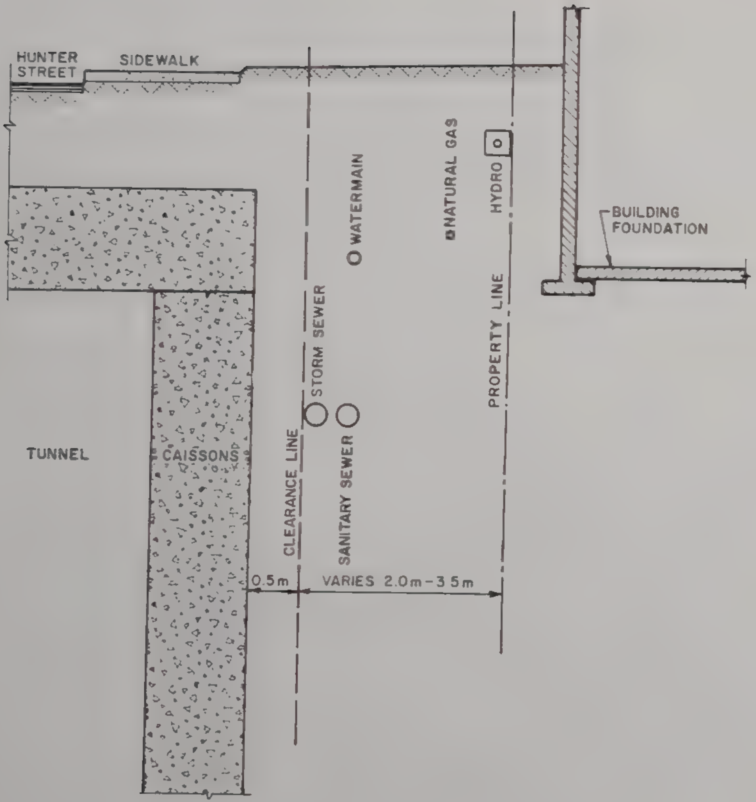
MH

EXHIBIT 7



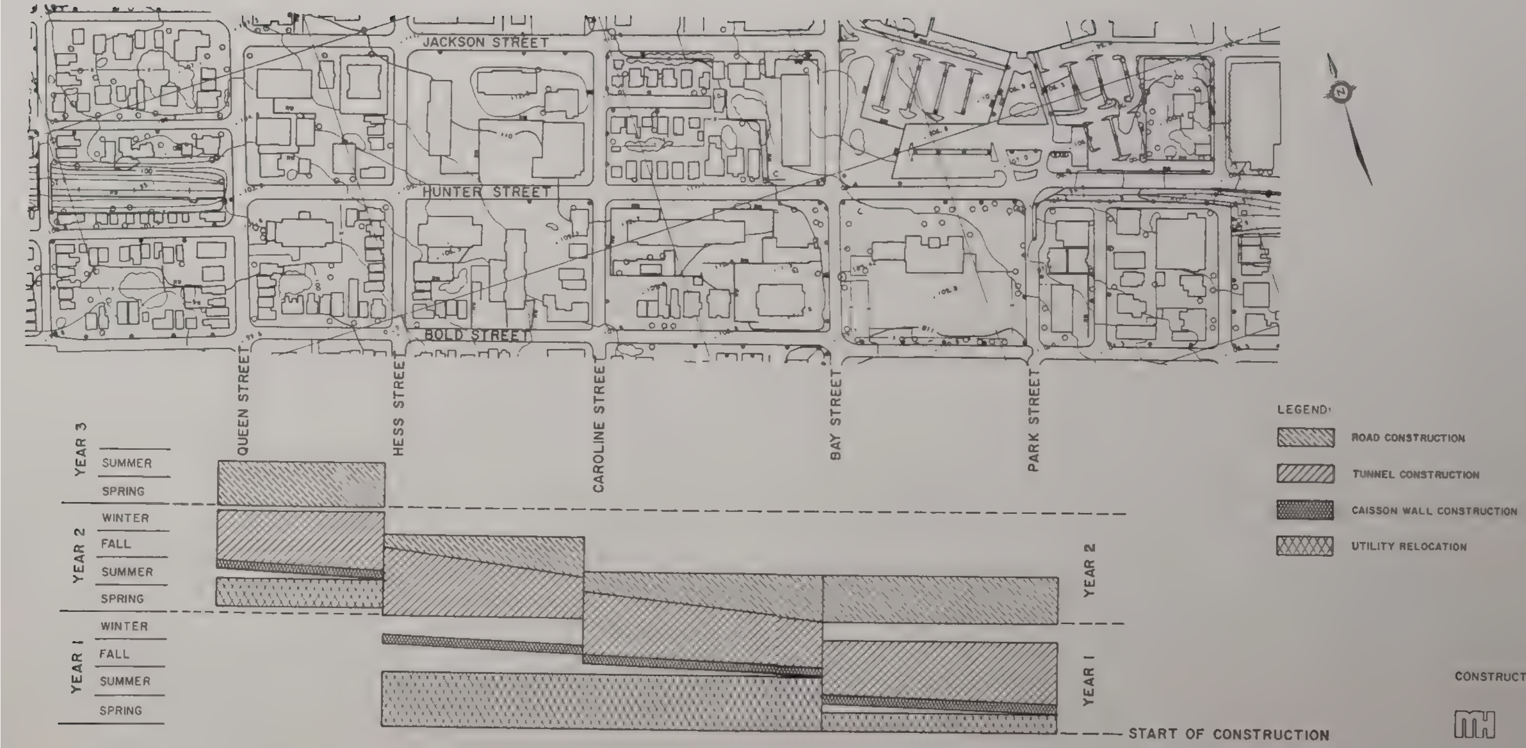
PLAN 2 DETOUR

EXHIBIT 8



TYPICAL CROSS-SECTION
SHOWING UTILITIES

EXHIBIT 9



CONSTRUCTION SCHEDULE

EXHIBIT 10

9 NOV. 87

GO Transit Service Expansion Program: Burlington to Hamilton
Hunter Street Tunnel
Addendum 1

Cost Estimate for Provision of Increased Tunnel Clearance

The tunnel construction cost estimate in the Hunter Street Tunnel report dated October 30, 1987 (MH Report No. 1870318A) was based on a 6.71 m (22' - 0") vertical clearance from top of rail as stated in CP's report of December 1986. In a letter dated 24 September 1987, CP increased their vertical clearance requirements to 7.92 m (26' - 0") from top of rail to allow for possible future electrification. The additional cost associated with the increased clearance is the subject of this Addendum.

The tunnel roof can not be raised without causing Hunter Street to be raised to an unacceptable elevation. Therefore the cost estimate is based on the track being lowered by 1.21 m (4' - 0"). CP freight traffic would have to be maintained with minimal interruption during the track lowering. The estimate is for the additional cost for the increased clearance for the tunnel only, and does not include related work beyond the ends of the tunnel, such as retaining walls, track lowering, etc.

Lowering of the track could not be done in one stage by moving the existing track to one side of the tunnel and constructing the new track on the other side at the final elevation because this would undermine the active track. Therefore an additional stage must be introduced where a temporary second track is constructed at an intermediate level.

The caisson wall would be extended by 1.8 m to accommodate the increased clearance. The increased length would require the caisson diameter to be increased from 1067 mm (42") to 1219 mm (48"). Struts and wales would also have to be strengthened.

The additional cost of constructing the tunnel with a 7.92 m (26' - 0") clearance would be $4.0 million including contingencies and engineering. A breakdown of the cost is given in Table 1A. Thus the total cost for the tunnel with the increased clearance would be $42 million.

TABLE 1A
Estimate of Additional Costs
to Increase Tunnel Clearance from 6.71 m to 7.92 m

TUNNEL CONSTRUCTION	
Caisson Wall:	$ 1,889,000
Struts and Wales:	$ 190,000
Excavation of Tunnel Floor:	$ 379,000
Temporary Trackwork and Signalling:	$ 238,000
SUBTOTAL:	$ 2,696,000
20% Contingencies:	$ 539,000
	$ 3,235,000
15% Engineering:	$ 485,000
	$ 3,720,000
TOTAL ESTIMATED ADDITIONAL COST:	Say $4.0 million

TOTAL ESTIMATED COST OF TUNNEL WITH 7.92 m VERTICAL CLEARANCE

Cost with 6.71 m clearance (Table 1):	$38.0 million
Additional costs for 7.92 m clearance:	$4.0 million
TOTAL ESTIMATED COST:	$42 million

Appendix G

Noise Analysis

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

NOISE ANALYSIS

McCORMICK RANKIN

OCTOBER 1988

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1. INTRODUCTION

The effect on noise levels of the proposed expansion of GO Train service between Burlington and Hamilton is documented in this report. The recommendations of the GO Train Service Expansion Program - Burlington to Hamilton Study include the shift of the existing GO Train daily service in Hamilton from the CN to the CP corridor, and the incremental expansion of the service up to that level which can be accommodated by the Hunter Street Tunnel (approximately 20 daily trains: 10 each direction each day). The further expansion of GO Train service between the Fairview and proposed Waterdown Road Stations in Burlington is discussed.

Within the study area (between Burlington Fairview Station and Hamilton's CP/TH&B Station) the recommended route passes mainly through industrial, vacant, or park land. However, three single family residential zones are adjacent to the tracks to be used by GO Trains: Enfield Road west of King Road in Burlington; Breadalbane Street near King Street in Hamilton; and Hunter and Canada Streets between Queen Street and Dundurn Street in Hamilton. The CP/TH&B Station in downtown Hamilton is surrounded by commercial land uses and the residences adjacent to the potential GO Train storage yards east of the station are discussed separately (see Key Plan).

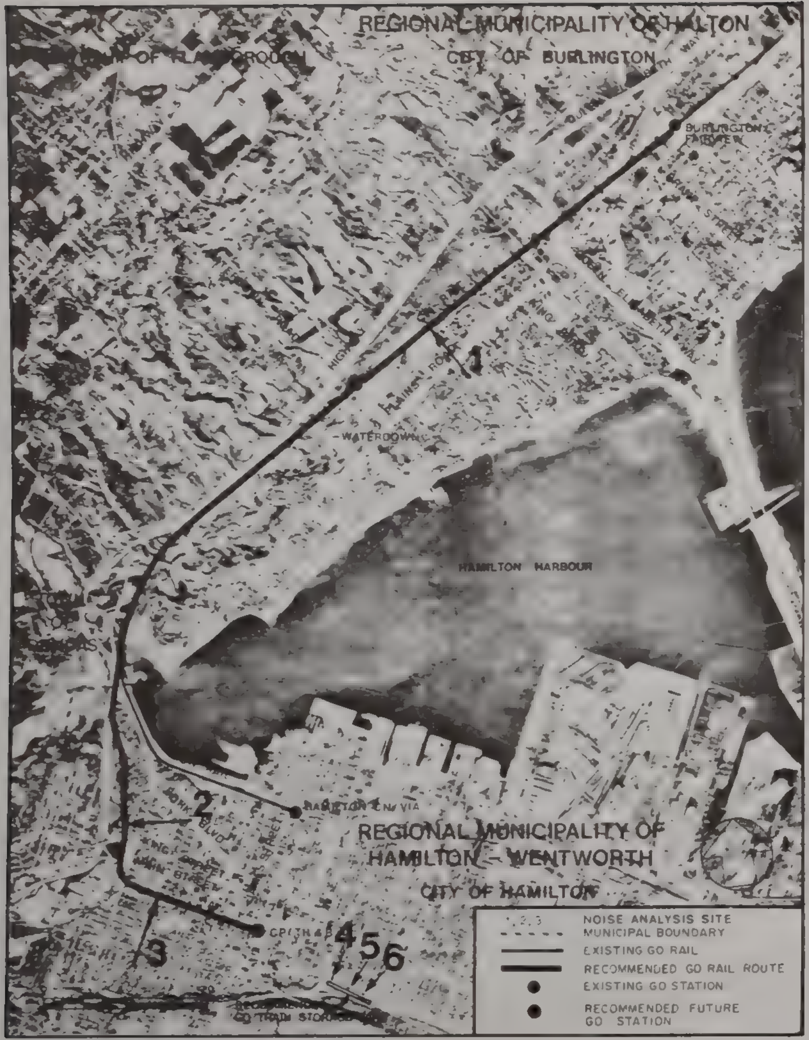
The existing train-related noise level is calculated from information supplied by CP and CN Rail, field surveys and GO and VIA Rail schedules for a typical weekday. Railway expansion plans and GO Train proposals are accounted for in the assessment of future noise levels. The future scenarios are taken to be in approximately 10 years.

The detailed calculations are based on the Ontario Ministry of the Environment's draft "Guidelines for Railway Traffic Noise Measurement", published as part of the 1987 document, "Environmental Noise Assessment in Land Use Planning". This technique is based on the model contained in the Canadian Mortgage and Housing Corporation manual "Road and Rail Noise: Effects on Housing, 1981". Noise levels are determined separately for day (0700-2300) and night (2300-0700).

Two terms used in the report are:

Leq(24): since sound levels vary continuously, sound is measured in terms of the equivalent sound level which has the same sound energy as the varying sound over a 24 hour period.

dBA: the decibel (A-weighted) is a measurement of the



GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

NOISE ANALYSIS KEY PLAN

loudness of any sound as perceived by the human ear. A change in sound level of less than 2 or 3 decibels is generally not noticeable.

2. RAIL TRAFFIC TYPES

THROUGH FREIGHT: long distance freight train, with between 2 and 5 locomotives is assumed for the purpose of this report.

YARD FREIGHT: local train, with one or two locomotives being used to move up to 75 cars between yards and to local customers. From observation and railway records, the assumptions are made of a single-engine 15 car train during the day and in the CN Burlington section only, a two-engine 60 car train in the night.

VIA, AMTRAK AND GO OFF-PEAK: passenger trains, typically comprising of a single engine and four cars.

GO PEAK: passenger train with a single engine and ten cars, operating during morning and afternoon peak periods only.

RAILWAY TRAFFIC VOLUMES

EXISTING: based on railway freight records and published passenger schedules. Since freight traffic varies on a daily basis, an average has been used.

FUTURE: the addition of freight moves as planned over a ten year period by CP Rail is included where appropriate. No addition to CN Rail traffic is assumed, but it is noted that freight traffic varies in accordance with overall economic conditions. No changes in passenger service are assumed.

FUTURE WITH EXPANDED GO: the revision of GO schedules to increase service between Burlington and Hamilton to 20 daily revenue trains from the existing 6 is added to the freight traffic changes of the FUTURE scenario.

FUTURE WITH EXTENDED GO: the extension of that level of GO Train service planned for Burlington Fairview Station to a Waterdown Road Station is assessed only in the Enfield Road (affected) area.

NOTE RE: GO TRAIN NON-REVENUE MOVES

Although 6 GO Trains are presently scheduled for passenger service each week day (3 eastbound in the morning rush hour and 3 westbound in the afternoon peak) between Burlington and the Hamilton CN Station, it must be noted that, for noise analysis purposes, a total of 12 daily GO Train moves occur on the CN line. Since GO Trains are stored in Toronto overnight, three are driven directly from Toronto to Hamilton with no passengers aboard early each morning, so as to be in place for eastbound commuter service commencing at 6:30 a.m. Following the afternoon westbound service, the same trains return without passengers express to Toronto for storage later in the evening.

With expanded GO Train service in the future, GO Trains are assumed to be stored overnight in Hamilton east of the CP Hunter Street Station, and any GO Train moves in the Hamilton-Burlington corridor will be revenue (passenger-carrying) trips. The actual storage location will depend on schedules in place at the time of expansion.

Thus, an increase in GO Train passenger service from 6 to 20 daily trains is only an increase in actual GO Train moves from 12 to 20, as 6 non-revenue moves are currently made that will not occur in the future. Also of interest to adjacent residents is the fact that the three westbound non-revenue GO Train moves before 6:30 a.m. will be eliminated as part of the expansion of service.

3. TRAIN TRAFFIC

The rail corridors along which GO Train service is proposed to be expanded are amongst the busiest in Canada, and the existing and future noise levels depend to a great extent on the non-GO trains using the tracks.

The route is split into three sections, each corresponding to one of the residential areas previously identified.

3.1 CN BURLINGTON (ENFIELD ROAD)

Two main line tracks and a varying number of other tracks comprise the main rail corridor between Toronto and both Niagara and the U.S.A. Through traffic is summarized in Table 1 for existing and various future conditions. Shunting activity within the Aldershot Yard is not considered in this listing of through trains, but is discussed in Section 4.1.

The Yard is proposed to be expanded significantly by CN Rail prior to 1992, when the expansion of GO Train service from Oakville to Burlington Fairview Station will displace CN activities currently occurring near Fairview Station. Additional rail activity, the lowering of yard tracks by up to 4 m, and the shifting of yard tracks farther away from the adjacent homes are proposed as part of the yard expansion. The extent of additional rail activity in the Yard is unknown at this time, and is therefore not added to the "future" figures. Since additional freight trains would

TABLE 1 - THROUGH RAIL TRAFFIC ON CN LINE AT ENFIELD ROAD, BURLINGTON

TYPE	EXISTING			FUTURE								
				NO GO CHANGE			EXPANDED GO*			EXTENDED GO**		
	DAY	NIGHT	TOTAL	DAY	NIGHT	TOTAL	DAY	NIGHT	TOTAL	DAY	NIGHT	TOTAL
THROUGH FREIGHT	12	12	24	20	16	36	20	16	36	20	16	36
YARD*** FREIGHT	10	4	14	10	8	18	10	8	18	10	8	18
VIA/ AMTRAK	23	1	24	23	1	24	23	1	24	23	1	24
GO OFF-PEAK	0	0	0	0	0	0	6	0	6	30	4	34
GO PEAK	8	4	12	8	4	12	12	2	14	15	2	17

* "Expanded GO" service refers to up to 20 GO Trains daily between Burlington and Hamilton Stations

** "Extended GO" service refers to extension of the Burlington full service west to the Waterdown Road Station and 20 daily GO Trains from Waterdown Road to Hamilton.

*** Refers to through trains, not shunting activities within the yard.

only serve to increase the ambient background noise against which noise due to GO Trains would be compared, ignoring the extra yard noise is consistent with a "worst-case" analysis of GO noise.

3.2 CP TORONTO CONNECTION (BREADALBANE STREET)

The CP Rail Toronto Connection links CP's Hamilton operations with the CN Oakville Subdivision at Bayview Junction. No passenger traffic currently uses the line, which consists of a double track converging to a single track and wye at the Main Street Junction.

On average, up to four through freight trains use the line during the day along with two at night, and plans are in place for seven additional daytime and four more night freight trains over the next ten years. No yard freight trains normally use the line. The introduction of a maximum 20 daily GO Train service is proposed for the line.

3.3 CP WATERFORD AND WELLAND SUBDIVISIONS (HUNTER STREET)

The main CP route in Hamilton passes in a deep cut adjacent to residences on Hunter and Canada Streets between Dundurn Street and Queen Street, whereupon it enters the Hunter Street Tunnel. The 1895 Tunnel passes a single track under Hunter Street for 600 m, emerging at Park Street and the former TH&B Railway Station. East of the station, twin tracks link rail yards at Forest Avenue, Victoria Avenue and Kinnear along the base of the Niagara Escarpment.

Freight traffic is frequent in this corridor, and includes all the trains travelling on the CP Toronto Connection (described above) as well as various yard freights moving cars and trains between the Aberdeen Yard in West Hamilton and the Kinnear Yard and the Gage Belt line to the east. The yard moves a total of ten during the day and four at night, with no major changes foreseen over the next ten years.

The single track tunnel limits the capacity of the line and consequently a 20 train daily GO schedule is the maximum envisaged in the corridor during the planning period. No other passenger services use the line.

3.4 GO TRAIN STORAGE

When the number of GO Trains leaving Hamilton in the morning is increased from the current three, there will be a requirement to store GO Trains east of the CP/TH&B Station (in order to minimize movement through the Hunter Street Tunnel). Depending on the schedules in place, up to six trains may be stored overnight. The Victoria Avenue Yard between Victoria Avenue and Wentworth Avenue is capable of being reconstructed to accommodate five ten-car GO Trains, while a sixth could be stored between the Yard and the CP/TH&B Station.

The yard is bordered by warehouses and a bowling alley to the south, while a number of older single-family homes are adjacent to the yard on the north. The existing CN/CP interchange tracks and the CN Ferguson Avenue line would be removed and the CP main lines shifted to the south of the yard area.

4. NOISE ANALYSIS

4.1 GO Train Route

Train-related sound levels are calculated in accordance with Ministry of the Environment guidelines for a point at the back of a house at ground level during the day (0700-2300) and at the back of a house at the second storey at night (2300-0700). The following values are used in the calculations and the results are summarized in Table 3.

TABLE 2 - CALCULATION DATA

Location	1 CN Burlington	2 CP Toronto	3 CP Hunter St.
Trains	see Sec. 3.1	see Sec. 3.2	see Sec. 3.3
Train speed			
- freight	45 km/h	22 km/h	33 km/h
- yard freight	45 km/h	-	30 km/h
- passenger	70 km/h	30 km/h	30 km/h
Distance c Tracks to house	40 m	26 m	15.5 m
Source height			
- locomotive	4 m	4 m	4 m
- wheel/rail	0.5 m	0.5 m	0.5 m
Receiver height			
- day	1.5 m	1.5 m	1.5 m
- night	4.5 m	4.5 m	4.5 m
Shielding height	2 m	10.5 m	7 m

TABLE 3 - NOISE ANALYSIS

Time	Location	Existing dBA	Future dBA	Future with Go Expansion* dBA	Change Due to GO dBA	Future with GO Extension** dBA	Change Due to GO dBA
Day	1. CN Burlington (Enfield Rd.)	64.5	65.5	66	+0.5	66	+0.5
	2. CP Toronto Conn. (Breadalbane St.)	54	58	59	+1.0	59	+1.0
	3. CP Hamilton (Hunter St.)	61.5	65	65.5	+0.5	65.5	+0.5
Night	1. CN Burlington (Enfield Rd.)	67	68.5	68.5	0	68.5	0
	2. CP Toronto Conn. (Breadalbane St.)	58	63	63.5	+0.5	63.5	+0.5
	3. CP Hamilton (Hunter St.)	64	65.5	66	+0.5	66	+0.5

* "Expanded GO" service refers to up to 20 GO Trains daily between Burlington and Hamilton Stations

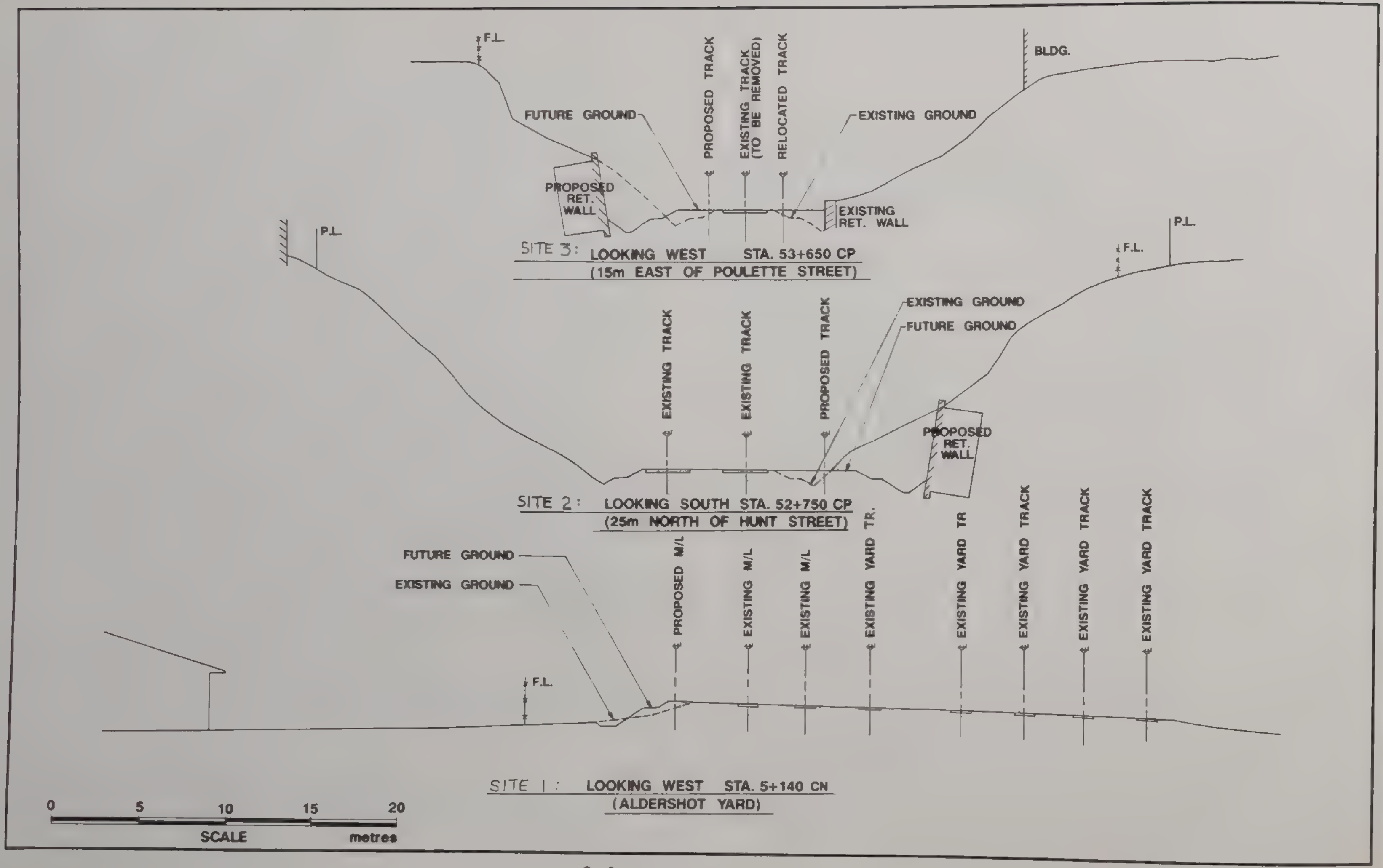
** "Extended GO" service refers to extension of the Burlington full service west to the Waterdown Road Station and 20 daily GO Trains from Waterdown Road to Hamilton.

NOTE: All figures calculated using M.O.E. methods and based on through rail traffic as summarized in Table 1. Noise due to rail yard activity at site 1 is not included in this table.

Since both through freight and rail yard activity varies in the CN corridor throughout the day and the week, a noise monitor was placed in the rear yard of one of the Enfield Road homes adjacent to the Aldershot Yard for the period of October 26 - November 2, 1988. The background noise was found to be extremely high, at approximately 69 dBA on average during both day time and night time on weekdays. The average noise levels during periods when GO Train moves currently occur were found to be slightly lower than the overall average. Since the calculated noise levels based on through freight and passenger traffic were in the order of 4.5 dBA lower than the measured levels, the difference appears to be attributable to the CN activity within Aldershot Yard. Since the maximum change in noise level at Site 1 due to GO Train expansion is 0.5 dBA, based on the calculated lower level of background noise, the GO Trains would have an even smaller impact relative to the higher level of yard related noise.

The impact due to GO Trains is therefore considered to be very minor in this area; as noise levels are and will continue to be dominated by the frequent long heavy freight trains and yard activity in the corridor. A minor benefit to residents adjacent to the CN Burlington line would occur with expansion of GO Train service between Burlington and Hamilton, in that the early-morning shuttling of GO Trains from the Toronto storage yard to Hamilton will be eliminated.

A similar situation occurs in the CP Hamilton corridor, whereby existing and projected freight trains dominate the background noise levels to the extent that additional GO Train service would result in only a very minor difference in the overall noise level.



CROSS SECTIONS

4.2 GO Train Storage Yard

In the redesign of the Victoria Avenue yard to accommodate GO Trains, a number of unique features are provided to minimize the noise impact at the residences to the north. Chief among these measures is the shifting of the main CP freight lines to the south to allow the GO yard to be constructed on the same side of the main line as the CP/TH&B Station platforms. Since through freight and CP yard trains are the dominant rail noise sources. The shift away from the homes yields a reduction in noise levels greater in some instances than the impact of introducing GO Trains to the area. For example, there is a net decrease in noise level at sites 5 and 6 with the introduction of GO service, due mainly to the shift of the CP tracks.

The operation of GO Trains within the yard would typically involve starting engines at different times between 5 and 7 a.m. and idling for up to 45 minutes in winter while pre-trip inspection is carried out. Each would accelerate and pull out of the yard between approximately 6 and 8 a.m. then return in the evening prior to 11 p.m., idle briefly, and be shut down overnight. During the day the trains would either be in use on the Lakeshore lines, be stored in the Toronto GO yards, or layover at the CP/TH&B Station. The engines would be at the west end of the train, removed from many of the residences east of Emerald Street. It should be noted that no GO marshalling will occur in the yard area.

Overnight and all weekend, the five parallel GO Trains would act as a major noise barrier between the homes and the main freight tracks, and the shift of the CP tracks would be a noticeable improvement over the current situations, whereby through freight trains pass within 15 metres of some homes.

In analysing the effect of the introduction of GO Train storage to the area, a very conservative approach has been used. For the purposes of analysis a 70 km/h passby speed has been used for the GO Trains rather than the actual 0-10 km/h in order to account for the extra noise produced while accelerating out of the yard. This procedure is in accordance with the report produced by Hatch Associates for GO Transit entitled "General Information on the Assessment of Noise and Vibration from the Proposed GO Transit Expansion". A reflective ground surface has been assumed and the noise barrier effect of the five parallel GO Trains has been ignored. In addition, sites 5 & 6 have been treated the same as site 4, even though the GO Train engines will be much farther away from the eastern sites and the likely sound effect at site 6 is only that of the slowly-moving end of each train. The GO Train impact is combined with background rail and traffic noise to produce the results of the analysis, shown in Table 4.

A nominal increase at noise at the west end of the yard and minor reductions to the east (due mainly to the shift of the CP tracks) are the result of the worst-case analysis procedure, indicating that the actual noise impact of GO Train expansion at the Victoria Avenue Yard is negligible.

TABLE 4: SUMMARY OF NOISE ANALYSIS - VICTORIA AVENUE YARD

SITE	FACTOR	EXISTING		FUTURE-NO GO		FUTURE-WITH GO		CHANGE DUE TO GO	
		DAY	NIGHT	DAY	NIGHT	DAY	NIGHT	DAY	NIGHT
4	Ambient Road Traffic	67	58	67	59	67	59		
West	CP Trains	54.5	54.5	58	58.5	58	58.5		
	GO Trains	-	-	-	-	51	54		
	Total	67	60	67.5	62	68	63	+0.5	+1.0
5	Road Traffic	60	51	60	52	60	52		
Centre	CP Trains	63	62.5	66	66.5	62.5	63		
	GO Trains	-	-	-	-	60	63		
	Total	65	62.5	67	66.5	65.5	66	-1.5	-0.5
6	Road Traffic	57	49	57	49	57	49		
East	CP Trains	58.5	58	62	62.5	59.5	60		
	GO Trains	-	-	-	-	53	56		
	Total	61	58.5	63	62.5	62.5	61.5	-0.5	-1.0

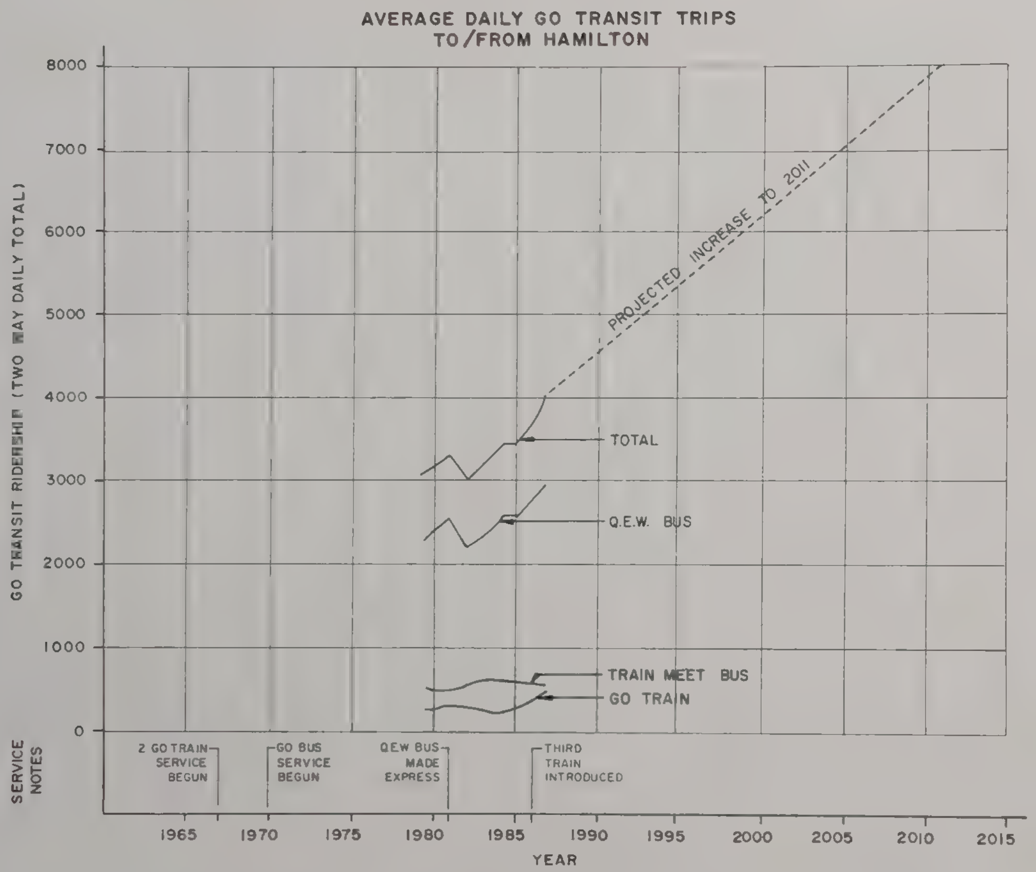
Appendix H

Ridership

APPENDIX H: RIDERSHIP

Ridership information for the GO Transit commuter services between Hamilton and Toronto is presented in the following exhibits. The ridership and service information is current as of spring, 1988, and represents typical weekday volumes. All figures were extracted from surveys and ridership counts undertaken regularly by GO Transit.

It should be noted that the increase in ridership to 2011 shown in Exhibit H1 is only a projection based on recent trends, and actual ridership over the planning period may vary significantly from it.



EXHIBIT

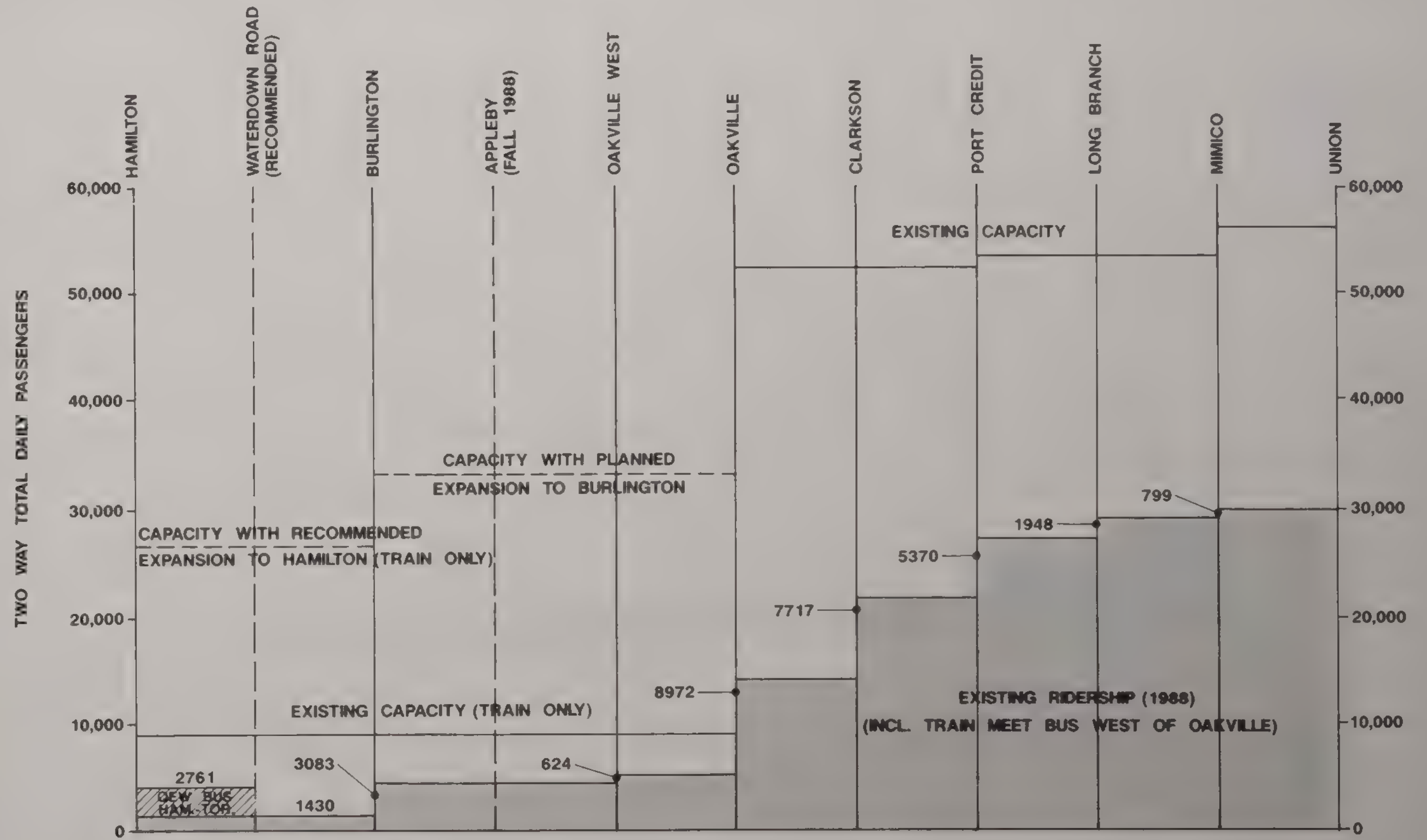
H1

GO TRANSIT HAMILTON RIDERSHIP TRENDS

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

Ministry of Transportation
GO TRANSIT
THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH
THE REGIONAL MUNICIPALITY OF HALTON



GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

Ministry of Transportation · GO TRANSIT · THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH · THE REGIONAL MUNICIPALITY OF HALTON

GO TRANSIT RIDERSHIP AND CAPACITY IN LAKESHORE WEST CORRIDOR

EXHIBIT

H2

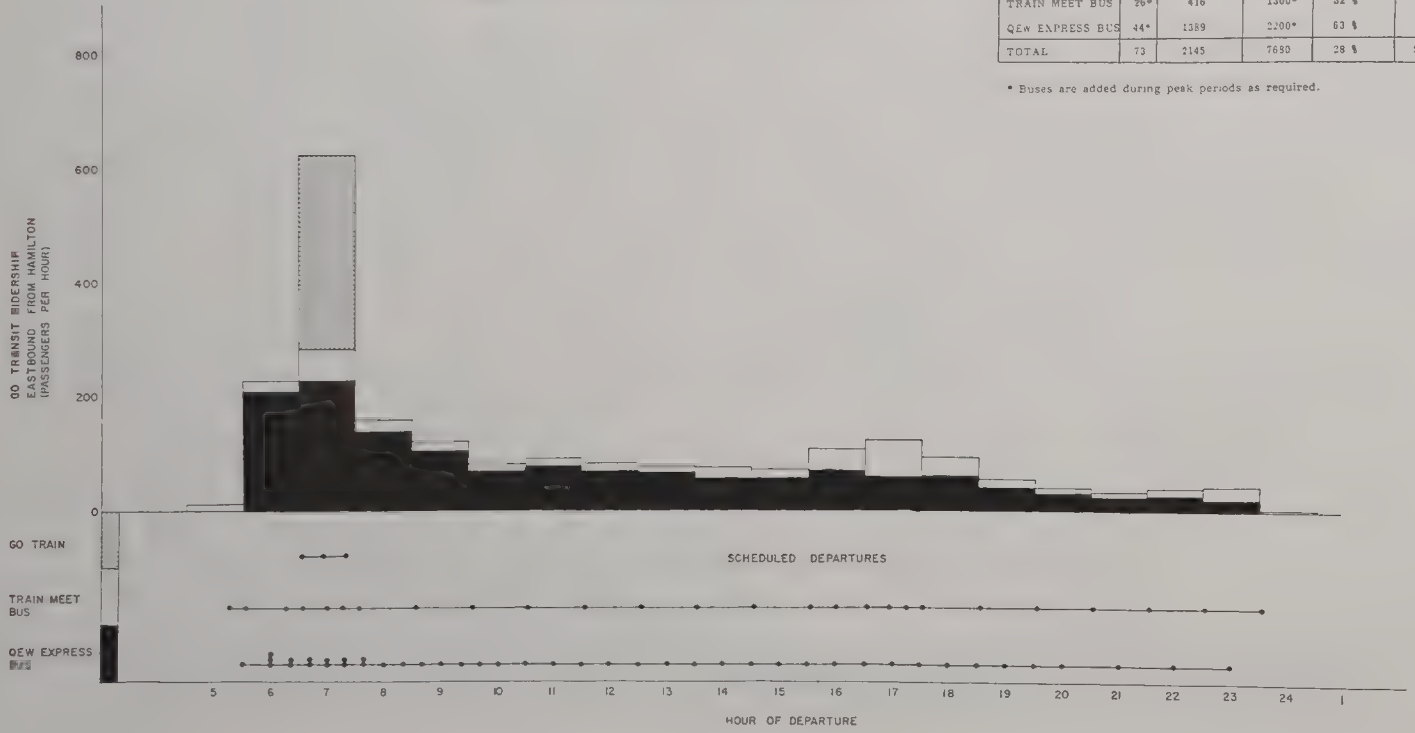
SUMMARY OF DAILY GO TRANSIT RIDERSHIP OUT OF HAMILTON

SERVICE	TRIPS	EASTBOUND DAILY RIDERSHIP	SEATING CAPACITY	SEAT OCCUPANCY RATE	EASTBOUND EMPTY SEATS
GO TRAIN	3	340	4180	8 %	3840
TRAIN MEET BUS	26*	416	1300*	32 %	884
QEW EXPRESS BUS	44*	1389	2200*	63 %	811
TOTAL	73	2145	7680	28 %	5535

* Buses are added during peak periods as required.

HOURLY GO TRANSIT RIDERSHIP EASTBOUND FROM HAMILTON

(COMMUTER SERVICES ONLY - LAKESHORE WEST GO BUS NOT INCLUDED)



EXHIBIT

H3

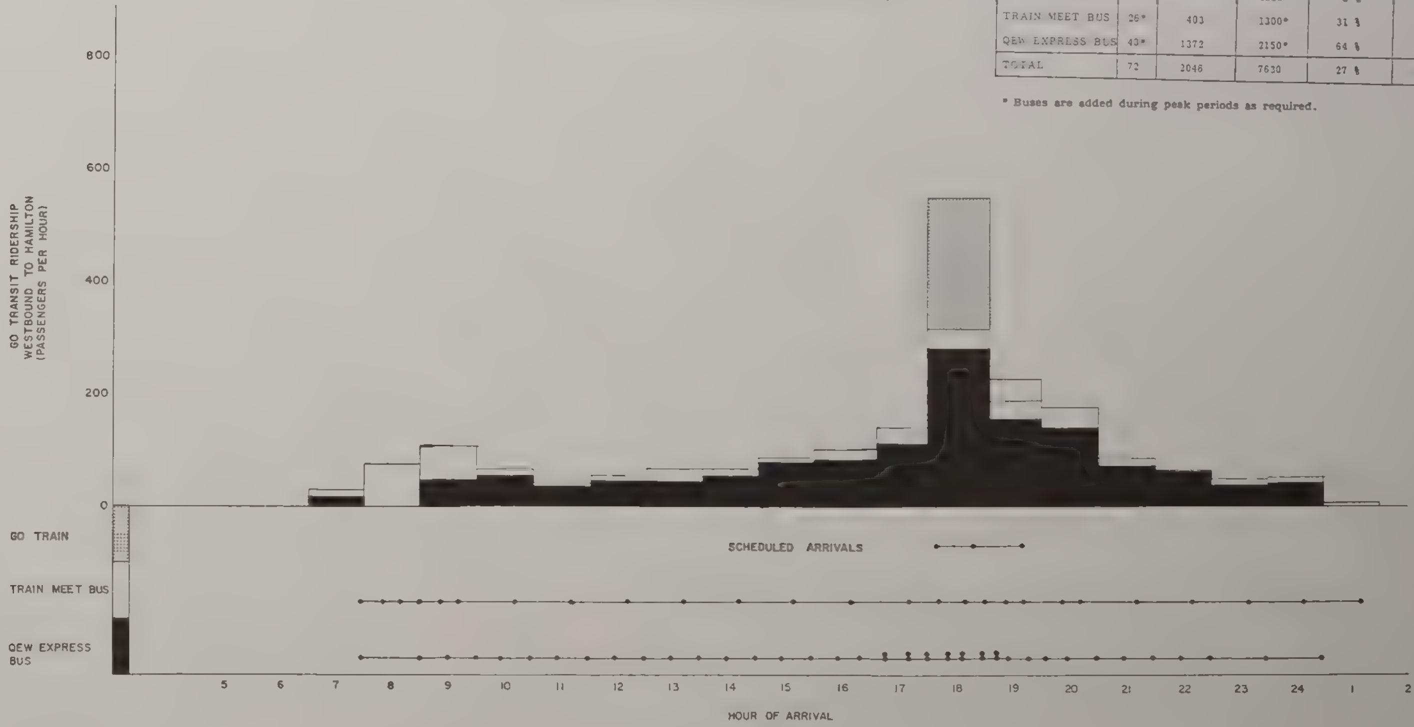
GO TRANSIT 1988 HAMILTON EASTBOUND RIDERSHIP

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

Ministry of Transportation
GO TRANSIT
THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH
THE REGIONAL MUNICIPALITY OF HALTON

HOURLY GO TRANSIT RIDERSHIP WESTBOUND TO HAMILTON
(COMMUTER SERVICES ONLY—LAKESHORE WEST GO BUS NOT INCLUDED)



SUMMARY OF DAILY GO TRANSIT RIDERSHIP INTO HAMILTON

SERVICE	TRIPS	WESTBOUND DAILY RIDERSHIP	SEATING CAPACITY	SEAT OCCUPANCY RATE	WESTBOUND EMPTY SEATS
GO TRAIN	3	271	4180	6 %	3909
TRAIN MEET BUS	26*	403	1300*	31 %	897
QEW EXPRESS BUS	43*	1372	2150*	64 %	778
TOTAL	72	2046	7630	27 %	5584

* Buses are added during peak periods as required.

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

GO TRANSIT 1988 HAMILTON WESTBOUND RIDERSHIP

EXHIBIT

H4

Appendix I

Report on First Round of Public Involvement

NOTE:

In the interests of brevity, attendance registers and copies of comment sheets received at the Public Information Centres are omitted from this Appendix. Published copies of the full report on each round of public involvement, including copies of each comment sheet received, are available for reference in the Urban Municipal Collection of the Hamilton Public Library, and are on file with the Clerks of the Region of Hamilton-Wentworth, the Region of Halton, the City of Hamilton, and the City of Burlington. The original comment sheets are held on file at GO Transit offices, 1120 Finch Avenue West, Downsview, Ontario.

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

SUMMARY REPORT ON
FIRST ROUND OF PUBLIC INVOLVEMENT

JUNE 1987

McCORMICK RANKIN

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EXECUTIVE SUMMARY

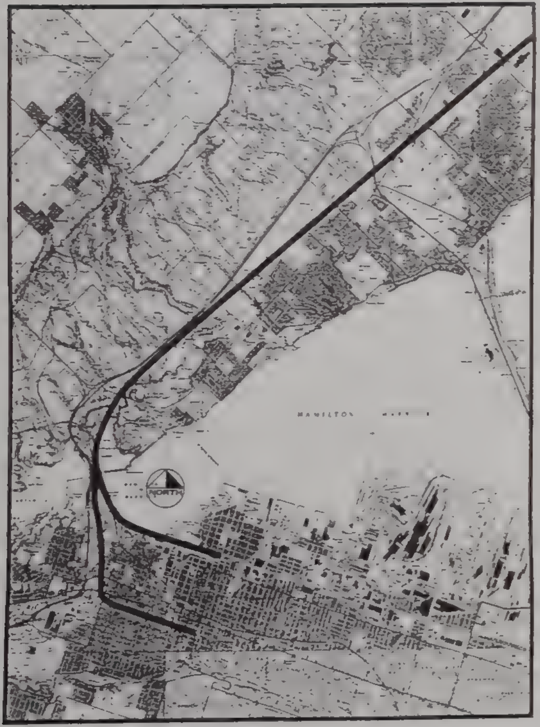
The first round of public involvement in the Burlington to Hamilton study portion of the GO Train Service Expansion Program achieved its objective of, in general, stimulating the two-way flow of information between the Project Team and both the public and its elected representatives. The first round consisted of a pair of public information centres and a series of meetings in June, 1987, at the beginning of the planning segment of the study.

The study objectives and its approach were received positively by all who had an opportunity to comment on it, and it was fully supported and encouraged at the elected level. The assessment of the alternatives to the undertaking and recommendation of the conventional GO Rail mode was received with little comment.

Of the alternatives presented, strong support was given for full service on the CP/TH&B alignment. However, some lesser support for the CN route was expressed. With respect to station sites, the location of the stations relative to the core of Hamilton was the determining factor in the expressed preferences of the public. Some opposition to the Kay Drage Park station site was expressed. The Waterdown Station was viewed either neutrally or positively, with negligible opposition to it being noted.

Some specific environmental concerns, notably the noise, visual and vibration effects on residential or recreational areas adjacent to the tracks (Royal Botanical Gardens, Aldershot Yard, CP alignment west of the Hunter Street tunnel), were raised. The integration of bus and train service at an intermodal terminal was encouraged.

The turnout was fairly low, with less than 200 people attending the two information centres in Hamilton and Burlington, despite advertising and direct mailing of 36 000 information brochures to affected area residents and businesses. The perceived lack of major issues or recommendations at this stage in the study, the perceived limited negative effects of the project and the short time frame of the publicity were probably the main factors in limiting turnout.



KEY MAP

Exhibit 1

INTRODUCTION

This report summarizes the comments received from the public and municipal elected officials during the first round of public involvement in the study in June 1987.

The study schedule is broken into three stages, each of which includes a round of formal public participation, in addition to ongoing technical, political and public involvement throughout the study process. The study got underway in February, 1987, with an overview of the situation and the development of alternative solutions. A preliminary assessment of modal alternatives confirmed the recommendation of the study of conventional GO train service expansion, but alternatives such as station locations, routes, level of service and storage locations were not studied at a level of detail sufficient to allow a recommended alternative to be chose. Three "key issues" warranting extensive study were identified.

The first round of formal public involvement occurred at the end of the overview/identification of alternatives stage, and before the analysis of the alternatives was undertaken. Following the analysis of alternatives, a second round of formal public involvement is planned. This would be in the fall of 1987, and at this time a technically preferred alternative is expected to emerge.

Further refinement and detailed planning of a recommended alternative would follow, with the results being presented to the public and officials in early 1988.

The purpose, therefore, of the first round of public involvement included the following

- o to develop public awareness and understanding of the project and study process;
- o to allow a public review of the work carried out in the first stage of the study;
- o to obtain comments and information from municipal officials, affected agencies, interest groups, and members of the public;
- o to obtain public input before the analysis of alternatives is carried out and to ensure that public concerns are addressed during the study;
- o to ensure that the public participation requirements of the Environmental Assessment Act are met; and
- o to demonstrate the Province's awareness of the sensitivity of regional residents and employees to major transportation initiatives, given that some previous major studies have been controversial and ultimately non-productive.

The round consisted of two public information centres in mid-June, supplemented by special meetings of the Project Team with a Technical Advisory Committee (local professional technical staff) and an External Team, consisting of representatives of interested government and supra-regional agencies. Presentations were made to committees of council of all four directly affected local municipalities - the Regional Municipality of Hamilton-Wentworth, the Regional Municipality of Halton, and the Cities of Hamilton and Burlington.

The public information centres which were advertised and held (one each in Hamilton and Burlington) consisted of a set of displays which interested people could review, and comment sheets which attendees were encouraged to fill out. Project Team members were available at all times to answer questions, discuss the displays, talk on a one-to-one basis about the project, and listen to public suggestions and comments. Executive members of local interest groups were invited to attend a special "preview" sessions in Hamilton and Burlington so that an in-depth understanding of their concerns could be obtained.

SCHEDULE OF MEETINGS

The following is a list of meetings that occurred during the first round of public participation:

Time	Place	Group	Description
Fri. June 5 9:30 a.m.	Burlington City Hall	Technical Advisory Committee	Formal presentation; question and answer session
Tues. June 9 2:00 p.m.	Hamilton City Hall	Hamilton-Wentworth Transportation Services Committee	Formal presentation, question and answer session
Wed. June 10 9:30 a.m.	Halton Regional Offices	Halton Public Works and Planning Committee	Formal presentation; question and answer session
Mon. June 15 2:00 p.m.	Hamilton City Hall	Hamilton Transportation and Environment Committee	Brief presentation; question and answer session
Mon. June 15 7:30 p.m.	Burlington City Hall	Burlington Public Works Committee	Brief presentation; question and answer session
Tues. June 16 10:00 a.m.	Art Gallery of Hamilton	External Team (8 Agencies represented)	Displays and presentation: question and answer session
Tues. June 16 1:30 p.m.	Art Gallery of Hamilton	Interest Groups (8 attendees)	Displays and one-on-one discussion
Tues. June 16 3:00 p.m. to 9:00 p.m.	Art Gallery of Hamilton	General Public (96 registered attendees + 20-30 unregistered	Informal drop-in format, Displays and one-on-one discussion
Thurs. June 18 1:30 p.m.	Burlington City Hall	Interest Groups (4 attendees)	Displays and one-on-one discussion
Thurs. June 18 3 00 p.m. to 00 p.m.	Burlington City Hall	General Public (51 registered attendees + 10-20 unregistered)	Informal drop-in format, displays and one-on-one discussion

PUBLIC AWARENESS

Apart from the scheduled meetings with involved parties such as the Technical Advisory Committee, Municipal Committees, and the External Team, an awareness of both the study and the public information centres was cultivated in a number of manners:

- brochures introducing the study and announcing the information centres were mailed on Monday, June 8, by postal walk to all homes and businesses in the study area. In Burlington, over 4,000 brochures were mailed in the areas between Plains Road and Highway 403 west of the Q.E.W., and between Prospect St. and the Q.E.W. to the east. Almost 32,000 brochures were mailed to addresses in Central Hamilton, bounded by Longwood Rd., Hamilton Mountain, Brant Ave., King St., Wellington St., and Hamilton Harbour.
- brochures were left at the Burlington Fairview, Hamilton CN, and Hamilton GO Bus stations on Monday June 15.
- brochures for distribution to council, staff and the public were sent to the Clerks (Hamilton-Wentworth, Halton and Burlington on Monday June 8
- a list of potentially interested Citizens Groups and External Agencies was compiled and brochures distributed with a cover letter to them in the week of June 8-12
- Ontario Government Notices of the study and information centres were placed in the Hamilton and Burlington editions of the Spectator (Wed June 10 and Sat June 13) and the Burlington Post (Wed June 10 and Sat June 13), and in the Toronto Star Toronto Sun and Globe and Mail on Wed June 10
- the media was present at the four presentations to committees of council and newspaper articles were published describing the proceedings. As well, the Spectator covered the visit of provincial Ministers Fulton (Transportation and Communications) and Munro (Citizenship and Culture) to the study area on Monday June 8
- CHCH Television aired news items concerning the study on Monday June 8.

PUBLIC INTEREST

A number of factors affected the public response to the study and the information centres

Among other proposals of the recent past, the GO-ALRT study of 1983-85 was a high-profile, controversial study that, although the program itself was cancelled, raised the awareness level of the community regarding transit and transportation issues. However, the same study produced a certain amount of cynicism and skepticism amongst the public and elected officials regarding major transit proposals.

In general, the public appears to be interested, knowledgeable and realistic while being in favour of expanded GO Train service. Articles and letters concerning the service and the project appear frequently in the Spectator.

A great effort to notify potentially interested parties of the information centres was made. The available time frame did not, however, allow some residents and interest groups to respond or make plans to participate in the information centres. They may, of course, participate through correspondence or meeting at any time throughout the study.

Another factor for the first round is that no specific recommendations were being proposed and many parts of the study remain to be analyzed. Interest Groups and the general public usually become more concerned when a specific recommendation is made.

For these reasons, Interest Groups were not strongly represented during the information centres and as a proportion of the 36,000 individual addresses notified the attendance of approximately 125 in Hamilton and 60 in Burlington is low.

However, those that attended the information centres made many comments and suggestions and were sincerely interested in the study, as shown by the extraordinarily high proportion who filled out comment sheets (50% in Hamilton and 20% in Burlington).

As well, the municipal committees of council reacted positively to the study and contributed a number of suggestions and comments.

SUMMARY OF COMMENTS

The meetings of the Technical Advisory Committee and External Team are the subject of separate minutes. The following summarizes the comments received from members of the Committees of Council and from the Interest Group representatives and citizens who attended the Public Information Centres.

COMMITTEE PRESENTATIONS

1. Regional Municipality of Hamilton-Wentworth
Transportation Services Committee
Tuesday June 9, 1987
Hamilton City Hall

Strong support was expressed by the Committee for the provision of full GO Train service as soon as possible into downtown Hamilton, preferably using the former CPR/TH&B Station. Two-way service was preferred over one-way (peak direction service).

Alderman D. Ross stated that Hamilton was poorly served in comparison to communities on other GO Rail lines.

Alderman G. Copps was concerned that the combination of Perimeter Road and GO Train impact on the waterfront would have a major negative effect on the attractiveness of the proposed Waterfront Park.

The committee passed a motion that the economic analysis compare one-way with two-way service during peak periods.

2. Regional Municipality of Halton
Public Works and Planning Committee
Wednesday June 10, 1987
Halton Regional Offices

The committee generally supported the objectives of the study. Councillor Mulkewic requested that noise studies be undertaken along the proposed route, specifically around King Road. The issue of noise would be important in part because one of the significant advantages of the GO-ALRT proposal over the current proposal was anticipated to be the relative quietness of ALRT technology.

Another concern expressed was that the complexity, cost, and timing of the Hamilton portion of the project would unnecessarily delay the extension of service within Halton to the proposed Waterdown Station, even though the Burlington-Waterdown portion of the project appeared to be a relatively straightforward project.

3. City of Hamilton
Transportation and Environment Committee
Monday June 15, 1987
Hamilton City Hall

Although many of the City's concerns were dealt with at the Hamilton-Wentworth Transportation Services Committee meeting, issues raised by City aldermen included ensuring that the Project Team addressed the possibility of extension of the service east of Hamilton and that City staff had full input into the study at all stages of the process.

The Committee requested that the economic analysis component of the study consider the various alternative routes and levels of service.

4. City of Burlington
Public Works Committee
Monday June 15, 1987
Burlington City Hall

The presentation of the project was received with little comment and general encouragement. The only additional concern raised by committee members was the implication of the proposals on the King Road level crossing of the route.

PUBLIC INFORMATION CENTRES

1. ART GALLERY OF HAMILTON
123 KING ST. W.
TUESDAY JUNE 16, 1987
1:30 p.m. - 3:00 p.m. (INTEREST GROUP EXECUTIVES)
3:00 p.m. - 9:00 p.m. (PUBLIC)

Nearly 100 attendees registered and an additional 20 or 30 did not sign in. Most engaged in discussion with members of the Project Team staffing the centre, and an unusually high proportion filled out comment sheets (60 were received).

As there were no specific recommendations presented, public concern focussed more on understanding the project and its issues. As well, the Project Team attempted to become aware of the viewpoints of the public and the issues and solutions as perceived by interested residents and business representatives.

The attendance and corresponding viewpoints were weighted towards residents of central Hamilton, who were mailed information directly.

Overall strong support was expressed for the provision as soon as possible of full two-way GO train service into the downtown CP/TH&B Station. It should be noted that the costs of those alternatives were not presented or known at this stage of the study. Opposition to the alternative centred on the possible cost of reconstructing the tunnel and the additional noise impact on adjacent homeowners. Of the 60 comment sheets received, 30 specifically supported the CP/TH&B route while 8 preferred the CN alternative.

The Hunter Street tunnel investigation will have to address the public perception noted at the information centre that a) widening the tunnel is unnecessary for full service b) CP Rail requirements are unreasonable, and c) the floor of the tunnel could be lowered to allow twin tracks. Some former TH&B employees and residents pointed out that in the 1930's and 40's the line and station was very busy, with frequent passenger and freight service coexisting with Morse code and manual signalling while the most up to date control systems now seem to limit traffic volumes to a lower level.

Support for use of the CN route came from those who believed parking and road access were better at the CN station than downtown. Some thought the cost of the CP route would be too high. Support also came from North End residents and businessmen who preferred a nearer service and from residents along the CP route who were concerned about additional noise impact there. Opposition to the CN station use centred around its location "too far from downtown" its (current) poor local bus service, and the quality of the surrounding neighbourhood.

Some attendees questioned why the potential station site at Kay Drage Park was identified and [illegible] the alternative [illegible] environmental concerns. The potential problems of having a station on the former dump site had been brought to some people's attention within the previous week with the closure of Kay Drage Park due to a complaint about a chemical burn on a Park worker. Seven comment sheets noted opposition, while four voiced support for the alternative. Support was based on the possibility of good auto-based commuter access from highway 403, the avoidance of downtown congestion, and, if used as a terminus, the elimination of the requirement to rebuild the Hunter St. tunnel.

An alternative that was brought up by a few people and one that has been identified in letters to the Hamilton Spectator is that of a station in the Main St./Dundurn St./403/King St. quadrant, possibly between the CP tracks and the freeway.

Although full GO Train service was preferred by the majority of the people, some expressed doubt that the demand for off peak or contra-flow service warranted significant expenditure, stating that a one way peak period service would be an adequate commuter service. Many people inquired as to whether express Hamilton-Toronto trains would be scheduled, pointing out that such a service would be a strong attraction to those who currently drive.

The availability of parking (particularly if it were not free for GO users) at the Hamilton terminus was a major concern of potential commuters.

A related matter is the potential integration of local Hamilton and GO Bus at the GO Train station. Many people were not aware of the service and terminal integration objective and based their initial reactions to the alternatives on the existing bus routes and bus terminal (reflected in comments such as "the CP station is better because its closer to the bus station"). A situation which may significantly affect current train ridership is the separation of the GO bus and GO Train terminals in Hamilton. One case raised was that of a commuter to Toronto who leaves his car at the CN Station for a GO train trip to Toronto yet, because of the very limited train service, returns to Hamilton by GO Bus, which stops only at the Bus terminal, 1 kilometre away from the car. The same situation occurs in the reverse and may be a major limiting factor in train ridership. Related to this is the perceived poor HSR local bus service to and from the CN station.

Some older riders avoided the train meet bus and the CN Station due to the many stairs involved at the Oakville and Hamilton Stations.

Resistance to the possibility of reduction of GO Bus service was expressed, as "full service" by GO Train is projected to be less frequent, particularly in the off peak, than the existing GO bus service. However, the delays to bus commuters due to traffic conditions are becoming of great significance and are continuing to grow. In rush hours and winter conditions bus trips of two hours between Hamilton and Toronto were cited, and the time advantage may well have shifted just in the past year or two to the train from the bus in peak periods.

Some people raised the point that other intercity bus services as well as VIA train service should be included in any integrated terminal, although VIA may not be interested in using the CP/TH&B Station if that were the terminal site.

Although barely mentioned in the comment sheets, the future extension of GO Train service from Hamilton east to Stoney Creek, St. Catharines and Niagara was frequently raised as a possibility at the centre. Although the planning of an extension is beyond the scope of the current study, the fact that rail service extension appears to be much more feasible from the CN than the CP station means that this factor may play a major role in station selection.

Related to this point are the various suggestions made for use of the Belt Line or Ferguson Avenue rail routes for a one-way loop in Hamilton, perhaps even involving three stations (CP/TH&B, CN and an east end Belt Line stop). An extension into Dundas was also proposed.

Finally, and perhaps inevitably due to the short time frame, some attendees complained of lack of adequate notice of the information centres. Although many business and residents groups were specifically targeted with brochures and information, few representatives attended.

2 BURLINGTON CITY HALL
456 BRANT STREET
THURSDAY, JUNE 18, 1987
1:30 p.m. - 3:00 p.m. (INTEREST GROUP EXECUTIVES)
3.00 p.m. - 9:00 p.m. (PUBLIC)

Approximately 50 people registered as visitors and 10 or 20 did not sign in. Thirteen comment sheets were received and most visitors discussed parts of the study with Project Team members staffing the centre.

Although concerns of Burlington residents predominated, some visitors came from Hamilton, having been unable to attend the Hamilton Information Centre held two days previously.

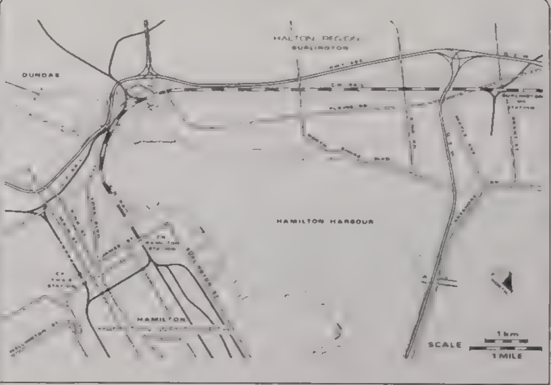
General support for improved GO Train service to Burlington was expressed with Burlington residents calling for commuter service in both the Hamilton and Toronto directions. Many comments were made on the Hamilton section, with opinions generally reflecting the public comments at the Hamilton Information Centre. Of the 6 comment sheets specifically mentioning a preference for a route in Hamilton, 5 supported the CP route and 1 the CN.

Concerns specific to Burlington that emerged were; the possible impact of any rail expansion on the Royal Botanical Gardens; the desirability of grade separating King Road with the CN tracks; and the potential for noise and social impact on neighbouring homes should the Aldershot Yard be used as a storage facility for GO Trains.

Some West Burlington residents expressed support for the Waterdown Station as it would provide good service to that area. The only major concern of potential users was accessibility of the station from Highway 403.

APPENDIX A

PANELS FOR FIRST ROUND OF
PUBLIC INFORMATION CENTRES
JUNE 16, 1987
JUNE 18, 1987



BURLINGTON TO HAMILTON

GO TRAIN SERVICE
EXPANSION PROGRAM

LEGEND

Study Area
Existing GO Rail Service ▬
Other Rail Lines —

PUBLIC INFORMATION CENTRES

Information centres have been arranged as shown below. They will be staffed by Study Team representatives who will be able to discuss the project with you. Your input into the identification and analysis of the alternatives is being sought and you are encouraged to attend one of the centres to express your views.

TUESDAY JUNE 16, 1987

3:00 p.m. to 9:00 p.m.
Art Gallery of Hamilton
123 King Street West
Hamilton, Ontario

THURSDAY JUNE 18, 1987

3·00 p.m. to 9:00 p.m.
Room 247
Burlington City Hall
426 Brant Street
Burlington, Ontario

For further information, please contact·

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GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON

Brochure 1

INTRODUCTION AND NOTICE OF
FIRST INFORMATION CENTRES

JUNE 1987

Ministry of Transportation and Communications

THE REGIONAL MUNICIPALITY OF HALTON

GO TRANSIT

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

BACKGROUND

The Government of Ontario announced, in the fall of 1982, that it intended to implement an inter-regional rapid transit system in the Hamilton-Toronto-Oshawa Lakeshore corridor. This system would use advanced light rail transit equipment (GO-ALRT). In 1985 the Government reviewed the use of the ALRT technology and decided to proceed instead with conventional GO rail technology on existing or expanded rail corridors. As part of this GO Train Service Expansion Program the Government proposes to extend full GO Train service westerly from Oakville to Burlington. In addition a further expansion of the service westerly from Burlington to Hamilton is being investigated.

The purpose of this brochure is to inform the public about the study of GO Train service expansion between Burlington and Hamilton and also to announce the first series of public information centres to discuss the project.

PLANNING STUDY

The Ministry of Transportation and Communications has initiated the Burlington to Hamilton GO Rail Expansion Study in order to assess the feasibility of expanding service between Burlington and Hamilton and to determine a preferred route.

The study is a joint provincial/municipal project involving representatives of the Ministry of Transportation and Communications, GO Transit, the Regional Municipality of Hamilton-Wentworth and the Regional Municipality of Halton.

Public participation is an important component of the study and consequently information centres and meetings have been scheduled to ensure that all potentially interested or affected individuals and groups have the opportunity to become involved in the study before decisions are made.

The study is being carried out in accordance with the requirements of the Environmental Assessment Act.

PUBLIC INVOLVEMENT

Public participation will be an essential part of the planning process. Members of the public will be encouraged and will have opportunities to participate at a series of information centres that will be scheduled in the spring of 1987, the fall of 1987 and the winter of 1987/88. Local newspaper advertisements and brochures will be used to announce the time and locations of these information centres within your area.

ALTERNATIVES

The overall study area and the basic route alternatives (CN or CP) are shown on the Key Map on the reverse of this brochure. In addition to the basic routes, alternatives will also be considered in a number of related areas. The following list is intended to provide an example of the type and range of such alternatives. It is not a complete list of all alternatives that will be considered.

Frequency of Trains

- various numbers of trains throughout the day, including trains both to and from Hamilton during peak travel periods.

Station Locations

- possible new station in the vicinity of Waterdown Road on the CN line.
- possible new station in the vicinity of Key Drags Park on the CP line.
- existing CNR station, at James St.
- existing CPR/TH&B station on Hunter St.

Train Storage/Layover Areas

- various sites generally associated with existing rail yards.

Staging Options

- various ways of staging the expansion of service.

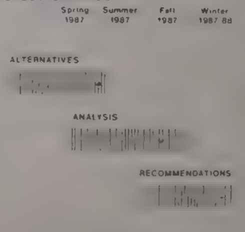
In addition, various transportation alternatives to providing expanded GO train service between Burlington and Hamilton have been reviewed and rejected. A description of these alternatives and the reasons for their rejection will be presented at the public information centres.

EVALUATION

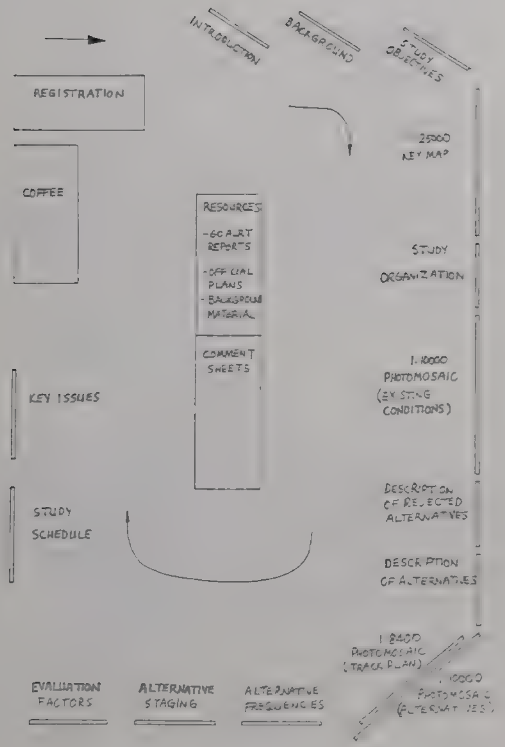
Following the public information centres in June all alternatives will be analyzed to determine their advantages and disadvantages and the changes that would result in comparison to retaining the existing three peak period trains on the CN line. The analysis will include many factors that reflect the following:

- Social effects
- Natural environmental effects
- Economic effects
- Level of transportation service provided
- Implementation and operating costs
- Ease of implementation and staging ability

STUDY SCHEDULE



● Public Information Centres



INTRODUCTION

WELCOME TO THIS INFORMATION CENTRE. IT HAS BEEN ARRANGED SO THAT PEOPLE WHO ARE INTERESTED IN THE BURLINGTON TO HAMILTON SECTION OF THE GO TRAIN SERVICE EXPANSION PROGRAM CAN REVIEW THE BACKGROUND INFORMATION AND DISCUSS IT WITH REPRESENTATIVES OF THE STUDY TEAM.

BACKGROUND

IN 1985 THE GOVERNMENT OF ONTARIO DECIDED TO PROCEED WITH A GO TRAIN SERVICE EXPANSION PROGRAM. AS PART OF THIS PROGRAM THE GOVERNMENT PROPOSES TO EXTEND FULL GO TRAIN SERVICE WESTERLY FROM OAKVILLE TO BURLINGTON. IN ADDITION A FURTHER EXTENSION OF THE SERVICE WESTERLY FROM BURLINGTON TO HAMILTON IS BEING INVESTIGATED. THIS EXPANSION PROGRAM FOLLOWS AN EARLIER STUDY OF AN INTER-REGIONAL, ADVANCED LIGHT RAIL TRANSIT SYSTEM (GO-ALRT) IN THE HAMILTON-TORONTO-OSHAWA LAKESHORE CORRIDOR WHICH WAS SET ASIDE IN 1985 IN FAVOUR OF THE USE OF CONVENTIONAL GO RAIL TECHNOLOGY.

STUDY OBJECTIVES

- TO DETERMINE LONG RANGE RECOMMENDATIONS FOR GO TRAIN SERVICE TO HAMILTON.
- TO PROVIDE FOR AN INTEGRATED LOCAL AND REGIONAL TRANSIT SYSTEM THROUGH THE DEVELOPMENT OF A SINGLE CENTRAL HAMILTON STATION.
- TO DEFINE STAGING PLANS THAT WOULD ALLOW FOR THE IMPLEMENTATION OF THE RECOMMENDATIONS.
- TO PROTECT A ROUTE AND PROPERTY FOR THE RECOMMENDATIONS.

KEY MAP

- 1:25,000 MILITIA MAP
- GO SYSTEM MAP (INSET) - BUS & RAIL

STUDY ORGANIZATION

THE MAIN ASPECTS OF THE STUDY ORGANIZATION INCLUDE THE FOLLOWING:

- THE STUDY IS A JOINT PROVINCIAL MUNICIPAL UNDERTAKING WITH PARTICIPATION BY:
  - MINISTRY OF TRANSPORTATION AND COMMUNICATIONS
  - GO TRANSIT
  - REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH
  - REGIONAL MUNICIPALITY OF HALTON
- THE STUDY IS ORGANIZED TO PROVIDE FOR COMPLETE AND [illegible] INVOLVEMENT THROUGHOUT ITS OPERATION.

THE STUDY IS BEING CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF THE ENVIRONMENTAL ASSESSMENT ACT.

EXISTING CONDITIONS

- 1:10,000 MOSAIC WITH EXISTING RAIL TRACK
- GO TIMETABLE

REJECTED ALTERNATIVES

A NUMBER OF ALTERNATIVES TO IMPROVED CONVENTIONAL GO RAIL SERVICE BETWEEN BURLINGTON TO HAMILTON HAVE BEEN CONSIDERED. THE FOLLOWING OPTIONS HAVE BEEN REJECTED AS UNSUITABLE

- LIGHT RAIL LINK: ALRT OR STREETCAR LINK BETWEEN CENTRAL HAMILTON AND BURLINGTON GO STATION.
  - THE GO-ALRT SERVICE THAT WAS PROPOSED IN 1985 INVOLVED HIGH COSTS AND SOCIAL IMPACTS AS WELL AS REQUIREMENT FOR PASSENGERS TO TRANSFER BETWEEN GO-ALRT AND GO TRAINS AT OAKVILLE. THE GOVERNMENT ABANDONED THIS ALTERNATIVE IN 1985 IN FAVOUR OF CONVENTIONAL RAIL SERVICE.
- BUS LINK: VARIOUS LEVELS OF IMPROVED SERVICE, SUCH AS ADDITIONAL BUSES, DEDICATED BUS LANES OR BUS ONLY ROADWAYS BETWEEN CENTRAL HAMILTON AND BURLINGTON GO STATION.
  - BUS SERVICE IS DEPENDENT UPON ROADWAY OPERATING CONDITIONS AND WILL BE SUBJECT TO DETERIORATION IN QUALITY AS PEAK HOUR CONGESTION INCREASES ON THE ROADWAY SYSTEM. HOWEVER BUS SERVICE WILL BE CONSIDERED AS A SUPPORT TO GO RAIL SERVICE, RATHER THAN AS AN ALTERNATIVE.
- ROADWAYS: ADDITIONAL ROADWAY CAPACITY BETWEEN HAMILTON AND BURLINGTON.
  - ROADWAY IMPROVEMENTS WILL BE CARRIED OUT INDEPENDENT OF GO RAIL IMPROVEMENTS AND ARE NOT CONSIDERED TO BE AN ALTERNATIVE TO GO RAIL SERVICE IN THIS STUDY.
- OTHER: NON-CONVENTIONAL COMMUTER MODES, SUCH AS AIRPLANE, FERRY AND BICYCLE.
  - NOT CONSIDERED REASONABLE ALTERNATIVES.

ANALYSIS OF ALTERNATIVES TO THE UNDERTAKING

ALTERNATIVE FACTOR	BASE CASE	CONVENTIONAL GO RAIL	LIGHT RAIL LINK	BUS LINK	ROADWAYS	OTHER
1 Economic Benefits	○	●	◒	◒	○	○
2 Cost	●	◒	○	◒	◒	○
3 Land Use Impact	●	●	◒	◒	◒	○
4 Operation	○	●	◒	●	◒	○
5 Transportation Network	○	●	◒	◒	○	○
6 [illegible]	○	◒	◒	●	○	○
7 Social Impact	◒	●	○	◒	◒	◒
8 [illegible]	●	◒	○	◒	○	●
9 Demand	◒	●	◒	○	○	○
10 Level of Service	○	●	◒	◒	○	○
OVERALL RATINGS	○	●	▨	▨	▨	▨

● Most Preferred

◒ Least Preferred

Rejected Alternatives

DESCRIPTION OF ALTERNATIVES

ROUTES

- BETWEEN BURLINGTON AND THE JUNCTION WITH THE CP TRACKS AT THE DESJARDINS CANAL THE EXISTING CN RAIL CORRIDOR IS THE ONLY AVAILABLE ROUTE.

BETWEEN THE DESJARDINS CANAL AND A HAMILTON STATION, TWO ALTERNATIVE RAIL CORRIDORS EXIST:

- CN ROUTE - ALONG THE WATERFRONT, PAST CN'S HAMILTON YARD TO THE CN STATION. VIA AND GO TRAINS USE THIS ROUTE TODAY.
- CP ROUTE - PAST KAY DRAGE PARK, THE CATHEDRAL OF CHRIST THE KING AND THROUGH A TUNNEL UNDER HUNTER STREET TO THE FORMER TH&B RAILWAY STATION.

STATIONS

GO TRAINS COULD USE THESE EXISTING OR FUTURE RAIL STATIONS

- CN STATION - THE MAIN CN HAMILTON STATION ON MURRAY STREET BETWEEN JAMES AND JOHN STREETS.
- CP/TH&B STATION - THE FORMER TH&B HAMILTON STATION ON HUNTER STREET BETWEEN JAMES AND JOHN STREETS.
- KAY DRAGE PARK - A POSSIBLE NEW STATION NEAR HIGHWAY 403 ON THE CP RAIL ROUTE IN THE WEST END OF HAMILTON.
- WATERDOWN - A POSSIBLE NEW STATION ON THE MAIN CN RAIL LINE NEAR THE INTERCHANGE OF WATERDOWN ROAD AND HIGHWAY 403 IN BURLINGTON.

OVERNIGHT/STORAGE YARDS

OVERNIGHT OR DAYTIME STORAGE TRACKS WILL BE REQUIRED FOR GO TRAINS. THE FOLLOWING RAIL YARDS ARE ALTERNATIVE SITES:

- VICTORIA AVENUE CP YARD: AT THE FOOT OF HAMILTON MOUNTAIN ON THE CP RAIL LINE EAST OF THE CP/TH&B STATION.
- CP/TH&B STATION: AT THE HUNTER STREET STATION IN HAMILTON
- ABERDEEN CP YARD: NEAR THE HIGHWAY 403/ABERDEEN AVENUE INTERCHANGE IN THE WEST END OF HAMILTON.
- HAMILTON CN YARD: ON THE HAMILTON WATERFRONT BETWEEN BAY STREET AND DUNDURN CASTLE.
- ALDERSHOT CN YARD: ON THE CN MAIN LINE BETWEEN WATERDOWN ROAD AND KING ROAD IN BURLINGTON.

ALTERNATIVES

- 1:10,000 MOSAIC WITH ALTERNATIVE ROUTES
  - IDENTIFY STATIONS
  - IDENTIFY YARDS

ALTERNATIVES

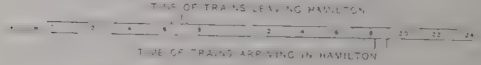
- 1 8,000
  - TRACK PLAN

GO TRAIN SERVICE EXPANSION PROGRAM

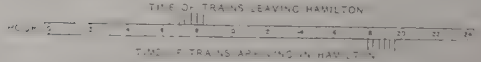
BURLINGTON TO HAMILTON STUDY

ALTERNATIVE LEVELS OF SERVICE

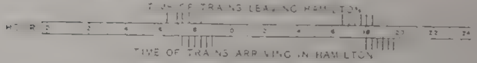
EXISTING 2 ONE WAY
TRAINS IN PEAK



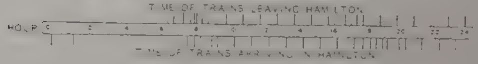
6 ONE WAY TRAINS
IN PEAK



[illegible] ONE WAY TRAINS
IN PEAK



FULL SERVICE



ALTERNATIVE STAGING PLANS

IT IS POSSIBLE TO CONSIDER AN ALMOST LIMITLESS NUMBER OF STAGES OF IMPLEMENTATION OF EXPANDED GO TRAIN SERVICE. THESE CAN BE GROUPED INTO THE FOLLOWING GENERAL CATEGORIES

- INCREASE THE NUMBER OF ONE-WAY TRAIN MOVEMENTS DURING THE PEAK PERIOD.
- ADD TRAINS IN THE REVERSE DIRECTION DURING THE PEAK PERIOD.
- ADD TRAINS IN BOTH DIRECTIONS DURING THE OFF-PEAK PERIOD.
- EXTEND SERVICE INITIALLY TO AN INTERMEDIATE STATION (WATERDOWN OR KAY DRAGE PARK) AND AT A LATER DATE EXPAND SERVICE INTO CENTRAL HAMILTON.

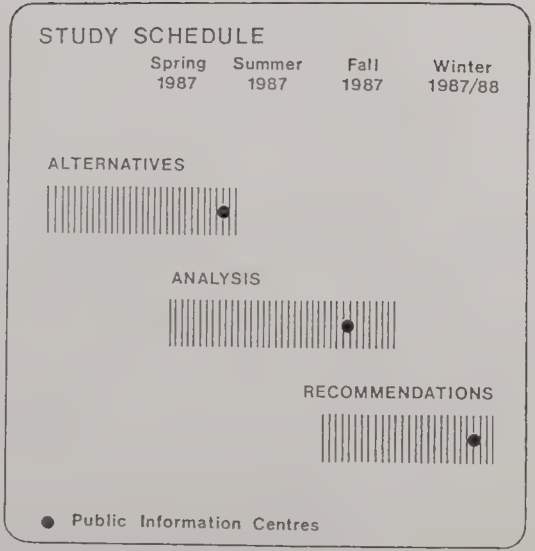
EVALUATION FACTORS

THE VARIOUS ALTERNATIVES WILL BE ANALYZED AND EVALUATED IN TERMS OF SIX MAIN AREAS OF CONCERN. THESE SIX MAIN AREAS ARE LISTED BELOW, TOGETHER WITH SOME OF THE FACTORS THAT WILL BE CONSIDERED IN EACH AREA.

- SOCIAL EFFECTS
  - COMMUNITY DISRUPTION
  - NOISE
  - VIBRATION
  - PROPERTIES REQUIRED
  - HERITAGE RESOURCES
- NATURAL ENVIRONMENTAL EFFECT
  - WATER
  - VEGETATION
- ECONOMIC EFFECTS
  - BUSINESS OPPORTUNITIES
  - DEVELOPMENT POTENTIAL
- LEVEL OF TRANSPORTATION SERVICE PROVIDED
  - RIDERSHIP
  - LOCAL TRANSIT INTEGRATION
- IMPLEMENTATION AND OPERATING COSTS
  - CONSTRUCTION COST
  - EQUIPMENT COST
  - PROPERTY COST
  - OPERATING COST
- EASE OF IMPLEMENTATION AND STAGING FLEXIBILITY
  - ABILITY TO STAGE
  - ABILITY TO EXPAND SERVICE

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY



KEY ISSUES

DURING THE EARLY ASSESSMENT OF THE POTENTIAL TO PROVIDE EXPANDED GO TRAIN SERVICE TO HAMILTON IT WAS DETERMINED THAT THERE ARE THREE KEY ISSUES THAT WILL PLAY A PART IN DETERMINING THE ROUTE, LEVEL OF SERVICE AND TIMING OF PROVIDING EXPANDED SERVICE. OTHER ISSUES MAY BE IDENTIFIED AS THE STUDY PROGRESSES, HOWEVER THE THREE THAT HAVE BEEN IDENTIFIED TO DATE ARE AS FOLLOWS:

HUNTER STREET TUNNEL

THE EXISTING 600 m (2000') LONG HUNTER STREET TUNNEL THROUGH WHICH ACCESS TO THE DOWNTOWN CP/TH&B STATION IS MADE HAS A SINGLE TRACK. IT WILL NEED TO BE RECONSTRUCTED IF EITHER FULL GO TRAIN SERVICE OR TWO-WAY SERVICE IN THE PEAK PERIOD IS TO BE PROVIDED ON THE CP ROUTE. THIS RECONSTRUCTION WILL ENTAIL MAJOR COSTS AND DISRUPTION DURING CONSTRUCTION AND MUST BE INVESTIGATED IN DETAIL BEFORE A FINAL DECISION IS MADE.

CN HAMILTON YARD

THE EXISTING CN HAMILTON YARD IS A MAJOR CENTRE FOR CN ACTIVITIES. THE EXPANSION OF THE EXISTING GO TRAIN SERVICE COULD REQUIRE SOME SIGNIFICANT REDEVELOPMENT OF THE YARD. IN ADDITION THE PROPOSED PERIMETER/INDUSTRIAL ROAD MAY REQUIRE LANDS FROM THE YARD. THE FEASIBILITY AND COSTS OF PROVIDING EITHER ONE OR BOTH OF THESE FACILITIES THROUGH THE YARD MUST BE INVESTIGATED BEFORE A FINAL DECISION IS MADE.

ECONOMIC BENEFITS

IT IS ANTICIPATED THAT THE PROPOSED EXPANSION OF GO TRAIN SERVICE, ALONG WITH THE INTEGRATION OF LOCAL TRANSIT SERVICE AT A DOWNTOWN TERMINAL, WILL RESULT IN ECONOMIC BENEFITS TO THE HAMILTON AREA. THESE BENEFITS WILL IN PART PROVIDE JUSTIFICATION FOR THE EXPENDITURES ASSOCIATED WITH THE EXPANSION. THE LEVEL OF POTENTIAL BENEFITS MUST BE INVESTIGATED BEFORE A FINAL DECISION IS MADE.

APPENDIX 'B'

INTEREST GROUP REPRESENTATIVES ATTENDING INFORMATION CENTRES

APPENDIX 'B'

INTEREST GROUP REPRESENTATIVES AT [illegible] FIRST ROUND OF PUBLIC INFORMATION [illegible]

HAMILTON (June 16, 1987)

David J. Cuming	[illegible]
J. Brian Henderson	[illegible]
L. Lee Kirkby	[illegible]
J. D. Thompson	[illegible]
Gil Simmons	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	Geography Dept. [illegible] University
[illegible]	[illegible]
[illegible]	[illegible] Planning and Research [illegible] of Hamilton
[illegible]	Metro Hamilton Real Estate Board
	[illegible]
[illegible]	[illegible]

[illegible] (June [illegible])

[illegible]	Royal Botanical Gardens
[illegible]	NDP Candidate - Burlington South [illegible]
[illegible]	[illegible] M.P.P. Burlington South
[illegible]	[illegible]
[illegible]	West Burlington Citizens Group

APPENDIX C

EXTERNAL TEAM MEMBERSHIP

GO Train Service Expansion Program

Burlington to Hamilton Study

External Team

In addition to members of the Project Team, the following are members of the External Team:

A Macdougall
G Mark
A Bertolo
P Kauppinen
G Pazzobon
R Roche
R Edwards
B Hodgins

T Toane
P Carruthers
J Clifford
S Llewellyn
S [illegible]
B Blake
G Hamilton

G W E Gordon
W Wilson

L A Douglas
G McKibbon
D J Patterson

R Kennedy
R Alstrom
R R Phillippe
C J Cole
S E Livingston
C Lonero

CN Rail
CN Rail
CN Rail
CP Rail
CP Rail
VIA Rail Canada
Hamilton Harbour Commission
Ministry of Transportation and Communications
Ministry of Agriculture & Food
Ministry of Citizenship & Culture
Ministry of the Environment
Environment Canada
Ministry of Education
Ministry of Health
Hamilton-Wentworth District Health Council
Halton District Health Council
Ministry of Government Services
Ministry of Housing
Ministry of Natural Resources
Niagara Escarpment Commission
Dept. of Indian & Northern Affairs Canada
Ministry of Municipal Affairs
Ontario Hydro
Ministry of the Solicitor General
Ministry of the Solicitor General
Transport Canada
Ministry of Treasury and Economics

APPENDIX 'D'

MINUTES OF MEETINGS

MINUTES OF MEETING

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

W.O. 1655-87

Time & Place: 10.00 a.m., Tuesday, June 16, 1987
Art Gallery of Hamilton

Attending:

J. Clifford	Ministry of the Environment
W. Green	Ministry of the Environment
S. Martindale	Ministry of the Environment
R. Kennedy	Ministry of Municipal Affairs
B. Baland	Ministry of Natural Resources
A. Macdougall	C.N. Rail
G. Mann	C.N. Rail
R. Edwards	The Hamilton Harbour Commission
G. McKibbon	Niagara Escarpment Commission
T. Lam	Ontario Hydro
R. Alstrom	Ontario Hydro
B. Ogden	Ministry of Transportation & Communications
H. Anders	Ministry of Transportation & Communications
F. Goh	GO Transit
J. Sutherns	McCormick Rankin
S. Schijns	McCormick Rankin
L. Scott	McCormick Rankin

Purpose: To introduce the study to the External Team and to review the information being presented at the public information centres.

Minutes:

- The Consultant provided an overview of the study noting that the information has been summarized on a series of display panels for use at the public information centres. Copies of the panels are attached to these minutes.

- In 1985 the Government of Ontario initiated the GO Train Service Expansion Program. As part of this program the study of extended GO train service to Hamilton has been initiated. The study is subject to the requirements of the Environmental Assessment Act.

- At the outset, alternatives to conventional GO Rail service were identified including light rail link, bus link, roadway improvements and other non-conventional modes. These, however, were rejected following a 'coarse' screening.

- The Consultant explained that the two alternative alignments are the existing CN and CP lines into Hamilton. In addition, there are a number of alternatives in terms of location of stations, overnight/storage yards, levels of service and staging. These alternatives will be analysed during July/August 1987 following which a technical recommendation will be reviewed at another External Team meeting in the fall of 1987.

- The Consultant noted that the Region of Hamilton-Wentworth and the City of Hamilton prefer the [illegible] of full service on the CP line. The feasibility and cost of reconstructing the Hunter Street tunnel, however, have not yet been determined. The other main issues are the nature of the economic benefits associated with the provision of full service and the feasibility and costs associated with the redevelopment of the CN-Hamilton yard.

- The Consultant noted that meetings with individual agencies would be arranged for technical discussions and the gathering of base data.

Question Period.

1. Mr. Edwards of the Hamilton Harbour Commission, asked about the timing of the expanded service in comparison to the Industrial Perimeter Road. The Consultant noted that the purpose of the investigation of the Perimeter Road is to protect for property and that no construction timing has been established. In addition, the timing of the [illegible] is also unknown. The Consultant indicated, however, that those groups with major interests in this area are involved in both studies.

2. Mr. Edwards asked if there were other possible alignments for CN Rail within Hamilton, eg. some of those proposed for GO-ALRT. The Consultant explained that the conventional heavy rail technology is much more constrained by horizontal and vertical alignment controls than the GO-ALRT technology. He added, however, that these differences would be identified more clearly.

3. Mr. Edwards noted that the location of the existing CPR/TH&B station would appear to be convenient for people coming into Hamilton but awkward for those commuting out of Hamilton due to lack of parking, downtown traffic congestion, etc. The Consultant explained that the new station would be a major multi-model station [illegible] and that the provision of parking would be an important consideration.

4. Mr. Kennedy (Ministry of Municipal Affairs and Housing) asked what type of E.A. was identified as a possibility. The Consultant replied that if more tracks are placed on existing track then the Class E.A. may apply, whereas if new track is proposed then a full E.A. would be required.

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5. Mr. Kennedy also asked if the addition of new tracks would be [illegible] within existing CN and CP rights-of-way. The Consultant replied that for the most part it would. However, additional property would also be required for the development of the [illegible].

6. Mr. Lam (Ontario Hydro) noted that there is an underground cable located on Hydro's property between King Street and [illegible] Street and a tower [illegible] to the east of the CN station which would have to be considered if service was extended beyond Hamilton along the CN line.

7. Mr. Clifford (Ministry of the Environment) commented that the Ministry of the Environment would be interested in noise, vibration, air quality, the extent of the grade [illegible] fill and construction impact. The Consultant noted that all of these would be assessed during the detailed analysis.

8. The meeting adjourned at 11:30 a.m. for an informal review of the display panels, copies of which are attached.

Minutes Prepared By,

[illegible] L. Scott

[illegible]
All in attendance
F. Norman
F. [illegible]
J. [illegible]
E. [illegible]
H. Wong
I. [illegible]

MINUTES OF MEETING

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

W.O. 1655-87

Time & Place:
9:30 a.m. Friday, June 5, 1987
Room 247, Burlington City Hall

Attending:	B. Ogden	Ministry of Transportation & Communications
	F. Goh	GO Transit
	D. McCleary	Regional Municipality of Halton
	J. Gartner	Regional Municipality of Hamilton-Wentworth
	J. Barr	Regional Municipality of Hamilton-Wentworth
	V. Abraham	Regional Municipality of Hamilton-Wentworth
	M. Main	City of Hamilton
	J. Cross	City of Hamilton
	J. Hall	Halton Region Conservation Authority
	J. Coates	Hamilton Region Conservation Authority
	J. Sutherns	McCormick Rankin
	S. Schijns	McCormick Rankin

Purpose: Initial meeting of Technical Advisory Committee to review study and obtain technical input to the study process.

Discussion:

Mr. Sutherns reviewed the study using the draft panels and brochure proposed for the upcoming public information centres. Copies of the panels were distributed to attendees. Minor revisions were suggested to some panels.

Mr. Gartner stressed the desirability of having the Hamilton station as close to downtown as possible. In this regard he also posed the question as to whether there could be any other feasible station sites over and above the existing CN and TH&B stations. It was indicated that it would be virtually impossible to be closer to downtown than the existing TH&B site.

Mr. McCleary requested that the study of the ridership demand include all possible staging, service and station options and that the study be done in terms of sensitivity analyses for the various alternatives. Mr. McCleary also pointed that that full GO train service extension from Oakville to Burlington is still under negotiation and that full service between Burlington and Hamilton could not be provided without it. Mr. Sutherns replied that the assumption of full service at Burlington was part of the terms of reference of the Burlington to Hamilton Study and that the study could be modified if any changes in that assumption were to occur.

Mr. McCleary also indicated that the residents in new Oakville areas tended to have eastbound or internal work trips which is a factor to be considered in the demand forecast analysis.

Mr. Coates suggested that a comparison be made between schedules of the 1940's and the current proposals.

Mr. Main pointed out that the Ferguson Avenue line alternative may be raised by the public and that an analysis of the alternative should be undertaken in order to answer any concerns about it.

Mr. Abraham expressed his department's reservations about the Kay Drage Park station site and suggested downplaying that alternative.

Minutes prepared by:

Stephen Schijns

S. Schijns, P. Eng.
McCORMICK RANKIN

SS:dw

cc: attendees
P. Norman
H. Schweinbenz
D. Turvey
F. Chung
H. Wong

APPENDIX 'E'

NEWSPAPER CLIPPINGS

Burlington Spectator June 9/87

Go trains: tough decisions

Full service could be expensive

By MARK HALLMAN
The Spectator

TORONTO — Selecting the route for expanded GO train service into Hamilton will require tough, expensive decisions, says a consultant for the Ontario government.

John Sutherns, project manager of the Burlington-Hamilton GO train expansion study, said yesterday "some very big questions have to be answered" before deciding "which routes or what level of service should be pursued."

Mr Sutherns said he will outline "three key issues" identified by his group's preliminary studies at a presentation today before Hamilton-Wentworth region's transportation services committee:

- Is it feasible to rebuild the Hunter Street railway tunnel to accommodate additional GO tracks terminating at the unused CP Rail station?
- How would Canadian National Railways' already-congested yard on the west harbor be affected by new GO trackage to and from CNR's James Street terminal?
- Which terminal — CP Rail or CNR — would generate the greatest economic spin-offs for Hamilton if full GO service was implemented?

Currently, GO operates three round-trip commuter runs between Toronto Union Station and CNR's James Street North terminal.

Mr Sutherns, an engineer with McCormick Rankin Associates Ltd. of Mississauga, said his study group has not reached any conclusions about the issues.

The public is invited to have its say at two public information sessions next week — June 16 at the Art Gallery of Hamilton, from 3 p.m. to 9 p.m., and at Burlington city hall June 18 between 3 p.m. and 9 p.m.

While the study is in its preliminary stages, Mr Sutherns said his team — which also involves the Toronto engineering firm of Morrison Hershfield Ltd. — has ruled out light-rail transit and new highways as alternatives to expanded GO train service along existing rail lines.

Whichever terminal and accompanying railway alignment are picked, the cost implications are considerable.

The full tab for track, station, yard improvements and property acquisitions between GO's Fairview station in Burlington and CP Rail's Hunter Street terminal in downtown Hamilton could be more than $200 million, Rick Ducharme, director of engineering and development for GO Transit, has said.

The trackwork alone would total $106 million, with the expansion of the Hunter Street tunnel costing $60 million, Mr Ducharme said.

Less-than-full service would be much cheaper. CP Rail believes track and signalling improvements on its line for up to six Toronto-Hamilton trains would be in the neighborhood of $9 million, but that excludes the property, terminal and yard costs.

The CN Rail line, with accompanying station improvements, could total anywhere from $100 million to $150 million, Mr Ducharme said. Here, the track improvements from Burlington to the west end of CN's harbor-front train yard could cost from $60 million to $75 million, said GO spokesman Cliff Lumley.

The projected costs are for running trains in both directions between Hamilton and Toronto during rush hour.

Mark Fraser, The Spectator

MTC adviser Frank Norman holds the umbrella as MPP Lily Munro and transport minister Ed Fulton dodge drips in TH&B station.

Fulton likes TH&B option for Hamilton

By PAUL WILSON
The Spectator

HE HAD to dodge leaks in the old roof, but Ontario's Minister of Transportation likes Hamilton's crumbling TH&B station best.

Ed Fulton slipped into the city yesterday morning for a quick look at Hamilton's two railroad morgues — the art deco Toronto Hamilton & Buffalo terminal on Hunter Street and CN's pillared fortress on James Street North.

One of them will be the downtown terminal for full GO Transit service that's to be extended from Burlington. Even though Hamilton's three GO trains now leave from the CN station each morning, both city hall and the region say GO should be at the TH&B because it's right downtown.

"That makes sense," said Mr. Fulton when the tour came to an end in the cavernous CN station. "I understand it's about a 15-minute walk from here to downtown. So you have to get into bus transfers...

"I asked the politicians of Hamilton some time ago which station they wanted. They said the one downtown and that means something."

Public debate on the extension of GO service begins next week. [illegible] first, Hamilton MPP Lily Munro wanted the transportation minister to see "the lay of the land ... This is better than making him rely on reports and maps."

She too likes the TH&B option and told the minister of the days when the station used to bustle.

The first question came as he walked under the faded TH&B marquee. "Is the B for Brantford?" Then Mr Fulton wanted to know if the city's bus terminal could be moved to the TH&B site. Advisers assured him it could.

On the tracks above, the minister was shown the big hurdle to the TH&B route — the ancient four-block-long Hunter Street tunnel.

Built 92 years ago in seven months, it was called an engineering wonder, even though three died working on the hurried, mucky project.

But the single track through the arched brick tunnel couldn't cope with full GO service, which means trains every 20 minutes.

Unlike the railroad pioneers of a century ago, today's tunnel builders would have to move gingerly past the foundations and underground garages of many highrise apartment buildings.

Last year Mr. Fulton said Hamilton shouldn't expect to see full GO service until the mid-1990s.

Globe & Mail June 10/87

ONTARIO GOVERNMENT NOTICE

GO TRAIN SERVICE EXPANSION PROGRAM — BURLINGTON TO HAMILTON

STUDY BACKGROUND

As part of the GO Train Service Expansion Program the Government of Ontario is in the process of extending full service from Oakville to Burlington. At the same time to study to assess the further expansion of GO Train service from Burlington to Hamilton has been initiated.

THE STUDY

The study to assess the expansion of GO Train service between Burlington and Hamilton is a joint Provincial/Municipal undertaking involving the Ministry of Transportation and Communications, GO Transit and the Regional Municipalities of Hamilton Wentworth and Halton. Basic alignment and station location alternatives will be considered and an implementation plan recommended. The study is subject to the Environmental Assessment Act of Ontario.

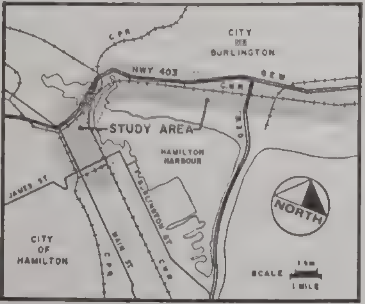
PUBLIC PARTICIPATION

Public participation will be a key part of the study. Public information centres have been arranged as follows:

3.00 P.M. TO 9:00 P.M. TUESDAY, JUNE 16, 1987
ART GALLERY OF HAMILTON
123 KING STREET WEST HAMILTON

3:00 P.M. TO 9:00 P.M. THURSDAY, JUNE 18, 1987
ROOM 247
BURLINGTON CITY HALL
426 BRANT STREET, BURLINGTON

You are encouraged to attend one of the information centres to express your views.



For further information, please contact:

Mr. Brian R. Ogden
Project Manager
Toronto Area Co-ordinating Office
Ministry of Transportation and Communications
1201 Wilson Ave.,
West Tower
Downsview, Ontario
M3M 1J8
Tel (416) 235-3969

or

Mr. John Sutherns, P. Eng
Project Manager
McCormick Rankin
Consulting Engineers
60 Briarwood Avenue
Mississauga, Ontario
L5G 3N6
(416) 274-3477

Ministry of Transportation and Communications

Appendix J

Report on Second Round of Public Involvement

NOTE:

In the interests of brevity, attendance registers and copies of comment sheets received at the Public Information Centres are omitted from this Appendix. Published copies of the full report on each round of public involvement, including copies of each comment sheet received, are available for reference in the Urban Municipal Collection of the Hamilton Public Library, and are on file with the Clerks of the Region of Hamilton-Wentworth, the Region of Halton, the City of Hamilton, and the City of Burlington. The original comment sheets are held on file at GO Transit offices, 1120 Finch Avenue West, Downsview, Ontario.

GO TRAIN SERVICE EXPANSION PROGRAM
BURLINGTON TO HAMILTON STUDY

SUMMARY REPORT ON
SECOND ROUND OF PUBLIC INVOLVEMENT

NOVEMBER, 1987

McCORMICK RANKIN

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APPENDIX B	MINUTES OF MEETINGS
APPENDIX C	MEDIA REPORTS
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APPENDIX E	ATTENDANCE REGISTERS AND COMMENT SHEETS
APPENDIX E1	MONDAY NOVEMBER 23, 1987 - HAMILTON
APPENDIX E2	TUESDAY NOVEMBER 24, 1987 - BURLINGTON
APPENDIX E3	WEDNESDAY NOVEMBER 25, 1987 - HAMILTON
APPENDIX E4	COMMENTS RECEIVED BY MAIL FOLLOWING INFORMATION CENTRES

INTRODUCTION

This report summarizes the comments received from municipal elected officials, technical and government agencies, interest groups, and the public during the second round of public involvement in the study, which occurred during November 1987. The November round of review was the second of three scheduled rounds, and was used to inform the public and interested agencies of the study, the analysis of alternatives carried out thus far, and the preliminary recommendations developed as a result of the analysis. The study and identified alternatives had been introduced at the first round of public involvement in June, 1987, and a third and final round is scheduled to follow the refinement of the recommendations and further analysis in spring 1988.

Although participation of the general public in the study tends to focus on the Information Centres held during each review round, there is technical, political, interest group, and public involvement both available and encouraged throughout the study. This report summarizes all the public participation that occurred during the second stage of the study.

The purpose of the second round of public involvement may be summarized as:

- to develop public awareness and understanding of the project and study process;
- to allow a public review of the work carried out in the analysis of alternatives stage of the study;
- to obtain reactions and comments from all interested parties concerning the study, analysis and preliminary technical recommendations;
- to ensure that public concerns are addressed during the study; and
- to ensure that the public participation requirements of the Environmental Assessment Act are met.

The review process included meetings of the Project Team with: the External Team (government agencies); the Technical Advisory Committee (Municipal professional staff); Executives of the Ministry of Transportation and GO Transit; and the GO Transit Board of Directors.

Presentations were made to Committees of Council of all four directly affected local municipalities: the Regional Municipality of Hamilton-Wentworth; the Regional Municipality of Halton, the City of Hamilton, and the City of Burlington.

Three Public Information Centres were subsequently held, with two in Hamilton bracketing one in Burlington. The Centres were advertised in newspapers and publicized with extensive mailing of brochures and posters. The Centres consisted of a set of displays which interested people could review, and comment sheets which attendees were encouraged to fill out. Project Team representatives were available at all times to answer questions, discuss the displays, talk on a one to one basis about the project, and [illegible] the public's suggestions and comments. Executive members of local interest groups were invited to attend special "preview" sessions so that an in-depth understanding of their concerns could be obtained.

SCHEDULE OF MEETINGS

The following is a list of the major meetings that occurred during the second round of public participation.

Technical Advisory Committee	Wed. Oct. 28 @ 9:30 a.m. Burlington City Hall
External Team	Fri. Nov. 6 @ 9:30 a.m. Burlington City Hall
Halton Planning and Public Works Committee	Mon. Nov. 9 @ 9:30 a.m. Halton Offices
Hamilton-Wentworth Transportation Services Committee	Tues. Nov. 10 @ 2:00 p.m. Hamilton City Hall
GO Transit Board of Directors	Fri. Nov. 13 @ 10:00 a.m. GO Transit Offices
Hamilton Transport and Environment Committee	Mon. Nov. 16 @ 3:00 p.m. Hamilton City Hall
Burlington Public Works Committee	Mon. Nov. 16 @ 7:00 p.m. Burlington City Hall

Minutes of the meetings are appended to this report.

The Public Information Centres were open to the Executives of Interest Groups from 2:00 p.m. to 3:00 p.m. and to the general public from 3:00 p.m. to 9:00 p.m. each day. The centres were held at Central Public School, 75 Hunter Street West in Hamilton on Monday November 23 and Wednesday November 25, 1987, and at Burlington City Hall on Tuesday, November 24, 1987.

PUBLICITY

Apart from the meetings with technical and political representatives noted above, public awareness of the study, and in particular the information centres, was fostered through an extensive publicity effort.

- brochures (see appended copy) detailing the study were distributed by mailman's walk to all postal addresses in the study area on November 12. The postal walks were the same as those used in the first round of public involvement in June 1987. In Burlington over 4,000 brochures were distributed in the areas between Plains Road and Highway 403 west of the Q.E.W., and between Prospect Street and the Q.E.W. in the east. Almost 32,000 brochures were mailed to addresses in Central Hamilton, bounded by Longwood Road, Hamilton Mountain, Brant Avenue, King Street, Wellington Street and Hamilton Harbour.

- Between 100 and 200 brochures were left at the ticket counters of the Hamilton, Burlington, Oakville West, Oakville, Clarkson and Port Credit GO Train stations as well as the Hamilton GO Bus station on November 12. The Burlington and Hamilton GO Train stations were restocked on November 17 and on November 24, and the Hamilton bus terminal was restocked on November 24.

- Hamilton City Hall, Burlington City Hall, Hamilton-Wentworth Regional offices, Halton Regional offices, and the Hamilton Public Library each received at least a hundred brochures for internal and public distribution.

- Ontario Government Notices advising of the study and the Information Centres were placed in the Hamilton Spectator, Burlington Spectator, and Burlington Post on November 11 and 21, and in the Toronto Star, the Sun, and the Globe and Mail on November 18.

- All external agencies, members of the Technical Advisory Committee, Interest Groups, provincial and federal elected officials, and interested individuals (including all those who signed the attendance register during the first round of Information Centres) were mailed brochures with a letter encouraging their participation in the second round of Public Involvement.

- All householders immediately adjacent to the rail corridor between the CP/TH&B Station in Hamilton and the Burlington GO Station were hand delivered a letter and brochure inviting them to attend the Information Centres. (These homes were also included in the general mail distribution of brochures).

- The media, including the Spectator, the Hamilton Journal, CHCH television and CBC radio gave extensive coverage to the second round of review, extending from the presentations to committees of Council through to the Information Centres. Copies of relevant newspaper articles and a transcript of one radio interview are appended to this report.

SUMMARY OF COMMENTS

The meetings preceding the Public Information Centres are minuted separately and the minutes are appended to this report. The Public Information Centres were attended by approximately 400 people, many of whom spent a length period examining the available information and discussing the study with the Project Team representatives on hand.

The comments made reflect the attendance distribution, which was likely weighted towards those who had received information directly by mail (including everyone in the study area) rather than potential GO Train users from outside the study area.

Nevertheless, a strong majority spoke in favour of the proposed shift of GO Train Service from the CN to the CP corridor within Hamilton, and there was general agreement with the Preliminary Technical Recommendations. The recommendations of staging of implementation in conjunction with demand, the provision of stations at Waterdown Road at the CP/TH&B Station, and the rejection of loop and secondary station concepts were generally accepted by the public.

Some frustration was evident at the length of time required before implementation of improved service.

Those who preferred the CN route tended to include the current GO train riders on the route, residents immediately adjacent to the CP tracks and residents of the north end of Hamilton. The reasons for preferring the CN corridor included the economic benefits that could result in the James Street North corridor, the availability of free parking, and the ability to extend services further east to Niagara. However, many of the reasons for preferring CN were expressed only as reasons for not preferring CP.

Reasons for preferring the CP route focussed on the intermodal transportation terminal within the downtown core. The possible economic benefits to downtown and the ability to fully service the station with local transit routes were also major factors noted.

Questions were raised by both CN and CP preferrers about the availability of adequate parking in the vicinity of the CP/TH&B terminal. Few attendees voiced concerns about the natural environment or cost elements of the program.

Amongst the attendees who lived adjacent to the rail corridors, specific concerns were raised regarding noise impact and its mitigation, vibration, construction description, fumes, and proximity of new facilities to the edge of the right-of-way. Some general concerns regarding traffic flow, congestion and parking near the station sites were also voiced.

The concerns and questions raised at various points were commonly allayed by it being pointed out that further detailed work was to be carried out regarding these areas and that further public review was both planned and possible.

Although only a portion of the attendees filled out comment sheets, the response rate of approximately 30 percent was reasonably high, and sheets may be taken as representative of the general opinions and concerns of the public. A more detailed breakdown of the written comments, including those received by mail following the information centres, follows. All of the comment sheets received during the review process are appended to this report.

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

SUMMARY OF COMMENT SHEETS FROM NOVEMBER INFO CENTRES

119 comment sheets received from approximately 400 attendees

(105 comment sheets from 315 attendees in Hamilton ≈33% response rate)

72 or 80% specifically preferred the CP/TH&B route

18 or 20% specifically preferred the CN route

Of the 90 comment sheets stating a preferred route, the reasons for the preference are linked as follow.

[illegible]	No. of Sheets Mentioning Factor (90)	[illegible]	[illegible]	[illegible]	[illegible] Factor [illegible]	[illegible]
Transportation Service	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Economic Development	[illegible]	[illegible]	5	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	6	[illegible]	[illegible]	[illegible]
Social Impact	[illegible]	[illegible]	[illegible]	[illegible]	5	[illegible]
Natural Environment	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Preserve station heritage	9	[illegible]	[illegible]	[illegible]	[illegible]	7
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Extension to [illegible]	[illegible]	1	[illegible]	[illegible]	[illegible]	[illegible]
Parking and [illegible]	[illegible]	[illegible]	6	[illegible]	[illegible]	0
Attendees with [illegible]	5	[illegible]	[illegible]	60*	0	0
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]*	0	0

* [illegible] sheets mentioning factor

[illegible]

[illegible]	[illegible]	[illegible]
Transportation Service	[illegible]	[illegible]
Economic Development	[illegible]	[illegible]
Cost	[illegible]	[illegible]
Social Impact	[illegible]	[illegible]
Natural Environment	[illegible]	[illegible]
Preservation station heritage	[illegible]	[illegible]
Extension to Niagara	5	[illegible]

[illegible] comment sheets [illegible] the relative importance to the [illegible] of the five [illegible] factors [illegible]

Factor	No. [illegible]	[illegible]
Transportation Service	[illegible]	[illegible]
Economic Development	[illegible]	[illegible]
Cost	[illegible]	[illegible]
Social Impact	[illegible]	[illegible]
Natural Environment	[illegible]	[illegible]

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

INFORMATION CENTRE SUMMARY

Info Centre	Attendance Registered	Attendance Total (2)	Comment Sheets	Comment Sheets* Favour CP	Comment Sheets* Favour CN
June Hamilton	104	130	60	30	8
June Burlington	55	70	13	5	1
Nov Hamilton (1)	125	175	45	23	9
Nov Burlington	63	90	8	4	0
Nov Hamilton (1)	103	140	47	30	6
Nov mailed in		-	19	15	-
Total	450	605	192	107	27

* those comment sheets specifically mentioning a preferred route

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APPENDIX A

PANELS FOR SECOND ROUND OF PUBLIC INFORMATION CENTRES

NOVEMBER 23, 24, 25, 1987

BACKGROUND UPDATE

Full GO train service currently operates in the Lakeshore corridor between Oakville and Pickering, with 3 daily trains extending to the Hamilton CN Station. Full service is projected to be extended from Oakville to Burlington within five years, and the current study is to investigate the feasibility of expanding GO Train service between Burlington and Hamilton.

The study began early this year and the background work, along with identified route and service alternatives, was reviewed during a series of presentations, meetings, and public information centres in June 1987. Since June, analysis of the alternatives has been carried out, and the key issues identified during the first stage of the study have been examined in detail.

The purpose of this brochure is to inform the public about the work carried out on the study so far, and to announce the second series of public information centres. These centres, to be held in Hamilton and Burlington during the last week of November, 1987, will be part of the second round of public review, in which all interested people are invited to examine and comment on the analysis of alternatives and the technically preferred option.

It should be noted that the study is being carried out in accordance with the requirements of the Environmental Assessment Act.

PLANNING STUDY ORGANIZATION

The study of the expansion of GO Train service between Burlington and Hamilton is a joint provincial/municipal undertaking, with participation by the Ontario Ministry of Transportation, GO Transit, the Regional Municipality of Hamilton-Wentworth and the Regional Municipality of Halton. A Project Team, comprising representatives of each organization, directs the study with input from local municipal staff, government agencies, technical organizations, concerned interest groups, local elected officials and interested individuals. The Project Team is assisted in carrying out the study by a group of professional consultants headed by McCormick Rankin, Consulting Engineers.

PUBLIC INVOLVEMENT

Public participation is an essential part of the planning process. The input of individuals and organizations during the first round of public review and throughout the study has been used in the development and analysis of alternatives. Further opportunities for public participation in the GO Train Service Expansion Program will focus on the series of information centres to be held in November 1987, and on a final round of public review in 1988. Local newspaper advertisements, mailed announcements and brochures are used to publicize the times and locations of these information centres within your area.

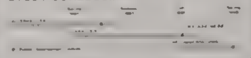
ALTERNATIVES

The purpose of the study is to determine the most feasible means of expanding GO Rail service between Burlington and Hamilton. The complete solution requires consideration of a complex set of interrelated alternatives. Areas in which basic alternatives have been analyzed include

- Route (see Key Plan)
  - CNR corridor
  - CPR/TH&B corridor
- Train Service
  - frequency and schedules
- Station Location (see Key Plan)
  - downtown Hamilton Terminal: CN or CP/TH&B station
  - intermediate station: Waterdown Road, Kay Drage Park and/or Main Street
- Train Storage (see Key Plan)
  - rail yards in Hamilton, Burlington and Toronto (not shown).
- Staging
  - increase train frequency and/or extend service to an intermediate terminus.

Each basic alternative has, in turn, a variety of sub-alternatives to be considered.

STUDY SCHEDULE



ANALYSIS

Alternatives have been analyzed to determine their advantages and disadvantages and the changes that would result in comparison to retaining the existing GO Train service on the CN line, using the following factors:

- Social Effects
- Natural Environmental Effects
- Economic Effects
- Transportation Service
- Cost
- Implementation and Staging

In addition, the three key issues identified in the first part of the study (CP Hunter Street Tunnel, CN Hamilton Yard, and Economic Benefits) have been examined in detail.

The complete analysis will be available for review and discussed at the upcoming public information centres. In addition, a technically preferred solution will be identified at the centres.

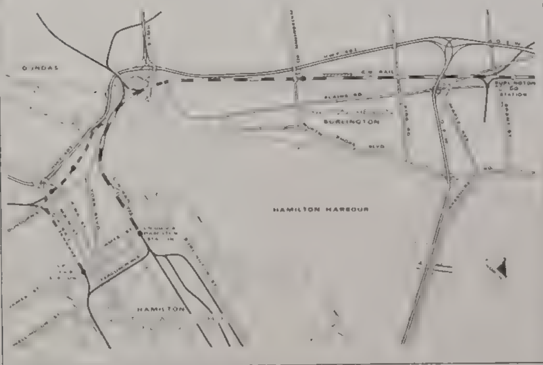
The identification of the technically preferred alternative has taken into account both the analysis and the views expressed by the public and elected officials during the first round of public review. Detailed evaluation and further refinements will follow from this second round of public review.

INTRODUCTION AND BACKGROUND

WELCOME TO THIS INFORMATION CENTRE. IT HAS BEEN ARRANGED SO THAT PEOPLE WHO ARE INTERESTED IN THE BURLINGTON TO HAMILTON SECTION OF THE GO TRAIN SERVICE EXPANSION PROGRAM CAN REVIEW THE RESULTS OF THE STUDY TO DATE AND DISCUSS THE PROJECT WITH REPRESENTATIVES OF THE STUDY TEAM.

THREE GO TRAINS PRESENTLY RUN FROM THE HAMILTON CN STATION TO TORONTO IN THE MORNING AND BACK IN THE AFTERNOON. FULL GO TRAIN SERVICE PRESENTLY RUNS BETWEEN PICKERING AND OAKVILLE AND IS PLANNED TO BE IN PLACE BETWEEN OAKVILLE AND BURLINGTON BY THE EARLY 1990's.

THE CURRENT STUDY IS TO INVESTIGATE THE POSSIBLE EXPANSION OF GO TRAIN SERVICE BETWEEN BURLINGTON AND HAMILTON



BURLINGTON TO HAMILTON
GO TRAIN SERVICE
EXPANSION PROGRAM

LEGEND

Study Area	
Existing GO Rail Route	▬
Alternative GO Rail Route	▭
Other Rail Lines	━
Possible GO Stations	●
Possible GO Train Storage Yards	▨

PUBLIC INFORMATION CENTRES

Information centres have been arranged as shown below. They will be staffed by Study Team representatives who will be able to discuss the project with you. Your input into the study recommendations is being sought and you are encouraged to attend one of the centres to express your views.

MONDAY NOVEMBER 23, 1987
3:00 p.m. to 9:00 p.m.
Central Public School Gymnasium
75 Hunter Street West
Hamilton, Ontario

TUESDAY NOVEMBER 24, 1987
3:00 p.m. to 9:00 p.m.
Burlington City Hall, Room 247
426 Brant Street
Burlington, Ontario

WEDNESDAY NOVEMBER 25, 1987
3:00 p.m. to 9:00 p.m.
Central Public School Gymnasium
75 Hunter Street West
Hamilton, Ontario

For further information, please contact:

Mr. Brian Ogden,
Project Manager,
Toronto Area Co-ordinating Office,
Ministry of Transportation,
West Tower,
1201 Wilson Ave.,
Downsview, Ontario,
M3M 1J8
Tel.: (416) 235-3969

Mr. John Sutherns,
Consultant,
Project Manager,
McCormick Rankin,
60 Briarwood Ave.,
Mississauga, Ontario,
L5G 3N6
Tel.: (416) 274-3477

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON

Brochure 2

NOTICE OF SECOND ROUND OF INFORMATION CENTRES

NOVEMBER 1987

Ministry of Transportation

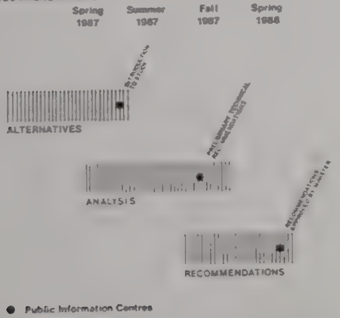
GO TRANSIT

The Regional Municipality of Halton

The Regional Municipality of Hamilton-Wentworth

STUDY OBJECTIVES

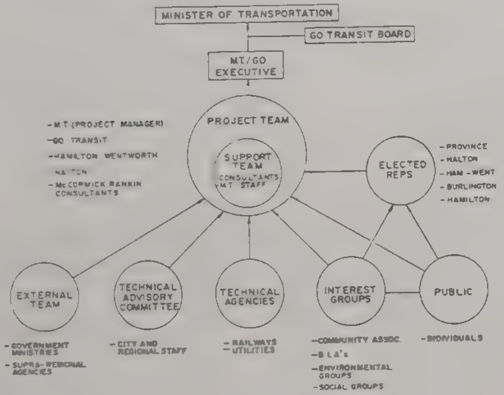
- TO DETERMINE LONG RANGE RECOMMENDATIONS FOR GO TRAIN SERVICE TO HAMILTON.
- TO PROVIDE FOR AN INTEGRATED LOCAL AND REGIONAL TRANSIT SYSTEM THROUGH THE DEVELOPMENT OF A SINGLE CENTRAL HAMILTON STATION.
- TO DEFINE STAGING PLANS THAT WOULD ALLOW FOR THE IMPLEMENTATION OF THE RECOMMENDATIONS.
- TO PROTECT A ROUTE AND PROPERTY FOR THE RECOMMENDATIONS.



THE CURRENT STUDY WILL BE COMPLETE WHEN AN ENVIRONMENTAL ASSESSMENT REPORT DETAILING THE ALTERNATIVES, ANALYSIS AND RECOMMENDATIONS IS SUBMITTED TO THE MINISTRY OF THE ENVIRONMENT. THIS IS SCHEDULED TO OCCUR IN LATE 1988 OR EARLY 1989. CONSTRUCTION OF ANY RECOMMENDED FACILITIES CANNOT OCCUR UNTIL FINAL APPROVAL OF THE REPORT BY THE MINISTRY OF THE ENVIRONMENT.

STUDY ORGANIZATION

THE STUDY IS FUNDED BY THE PROVINCE OF ONTARIO AND IS DIRECTED BY THE MINISTRY OF TRANSPORTATION AND GO TRANSIT THROUGH A PROJECT TEAM, WHICH INCLUDES REPRESENTATIVES FROM THE REGIONS OF HAMILTON-WENTWORTH AND HALTON. THE STUDY IS CARRIED OUT WITH INPUT FROM THE PUBLIC AND INTERESTED AGENCIES, AND A REPORT IS PREPARED WITH RECOMMENDATIONS FOR THE MINISTRY OF TRANSPORTATION. THE STUDY IS BEING CARRIED OUT IN ACCORDANCE WITH THE ENVIRONMENTAL ASSESSMENT ACT AND WITH COMPLETE AND OPEN PUBLIC INVOLVEMENT.



PRELIMINARY TECHNICAL RECOMMENDATIONS

ROUTE

- SUBJECT TO ENVIRONMENTAL ASSESSMENT APPROVAL, SHIFT EXISTING SERVICE FROM CN STATION TO CP/TH&B STATION.

LEVEL OF SERVICE

- PROCEED WITH DETAILED SIMULATION BY CN AND CP TO DETERMINE VARIOUS LEVELS OF SERVICE AND TRACK REQUIREMENTS (E.G. AT TUNNEL).
- SUBJECT TO ENVIRONMENTAL ASSESSMENT APPROVAL, PROVIDE INCREMENTAL IMPROVEMENTS IN LEVEL OF SERVICE AS APPROPRIATE.

STATIONS

- ESTABLISH THE REQUIREMENTS FOR THE STAGED IMPLEMENTATION OF THE INTEGRATION OF BUS AND RAIL SERVICES AT THE TH&B STATION. THIS FACILITY WILL BE THE FOCUS FOR DOWNTOWN HAMILTON ACCESS TO THE GO TRAIN SYSTEM.
- PROTECT FOR THE FUTURE STAGED IMPLEMENTATION OF A STATION AT WATERDOWN ROAD. THIS STATION WILL PROVIDE THE FOCUS FOR REGIONAL ACCESS VIA THE HIGHWAY NETWORK TO THE GO TRAIN SYSTEM.

ANALYSIS FACTORS

- TRANSPORTATION SERVICE
  - RAIL
  - BUS
  - STAGING
- ECONOMIC EFFECTS
  - COMMERCIAL
  - RESIDENTIAL
  - TOURISM
  - ATTRACTION TO HAMILTON
- CONSTRUCTION COSTS
  - RAIL COSTS
  - STRUCTURE COSTS
  - TUNNEL COSTS
- SOCIAL EFFECTS
  - COMMUNITY INTRUSION
  - NOISE
  - CONSTRUCTION EFFECTS
- NATURAL ENVIRONMENTAL EFFECTS
  - SENSITIVE AREAS
  - VEGETATION
  - WATER

GO TRAIN SERVICE EXPANSION PROGRAM - ANALYSIS OF ALTERNATIVES

CRITERIA	CP/TH&B STATION		CN STATION	
	EXISTING	POTENTIAL	EXISTING	POTENTIAL
o Population within 750 m of station	[illegible]	[illegible] *	6,[illegible]	[illegible] *
o Employment within 750 m of station	21,260	26,750 *	7,330	10,970 *
o Residential unit development within 750 m of station	±7,540	±8,560	±2,960	±3,180
o Commercial development within 750 m of station (includes office and retail commercial)	207,200 m² *** (office only)	±555,600 m² **	Negligible	±[illegible] m² **
o Tourist/Recreational attractions within 750 m of station	6 (Copps Coliseum, Art Gallery, Football Hall of Fame, Convention Centre, Jackson Square, Hamilton Place)	8 (The 6 in existing + Theatre Aquarius and Eaton Centre)	[illegible]	1 (Waterfront Park)
o Compatibility of Terminal with Municipal Land Use/ Development policies	Not applicable - Terminal unused	Compatible	Compatible since already in use	Less compatible since not in development area

* Population and Employment Figures Based on Year 2011 Ministry of Transportation Forecast

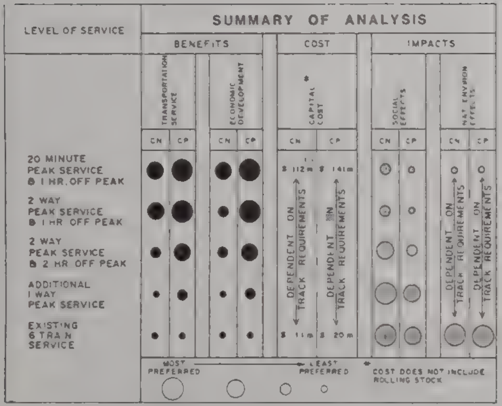
** Based on 65% of Maximum Permissable Floor Area Under Current Zoning. Source: City of Hamilton

*** Source: Chambers & Co. Ltd., Hamilton Office Space Inventory, July 1987

GO TRAIN SERVICE EXPANSION PROGRAM - EVALUATION OF ALTERNATIVES
ECONOMIC EFFECTS

CRITERIA	CP TH&B FULL SERVICE	CP TH&B PARTIAL 2 WAY	CP TH&B IMPROVED 1 WAY	CN FULL SERVICE	CN PARTIAL 2 WAY	CN IMPROVED 1 WAY
o Likelihood of increasing/ reinforcing the number of people moving to Hamilton	●	•	–	●	•	–
o Likelihood of increasing/ reinforcing the draw to major tourism attractions	⬤	•	–	●	•	-
o Likelihood of increasing/ reinforcing attractiveness of the core to businesses	⬤	•	–	●	•	-
o Likelihood of stimulating/ reinforcing localized redevelopment and convenience order businesses	●	●	•	●	•	–

LEGEND HIGH ⟶ LOW ⬤ ● ○ • NO EFFECT –



(1) THESE CN COSTS ARE BASED ON A PRELIMINARY ASSESSMENT THAT DOES NOT REFLECT A DETAILED SIMULATION OF OPERATIONS WITHIN THE CN YARD OR THE INTERACTION OF THE GO/CN/PERIMETER ROAD AND WATERFRONT PARK PROPOSALS. IT IS POSSIBLE THAT A FINAL ASSESSMENT WOULD RESULT IN SIGNIFICANTLY HIGHER COSTS.

FUTURE WORK

THE FOLLOWING ACTIVITIES NEED TO BE CARRIED OUT BEFORE THE STUDY IS COMPLETE:

RAIL STUDIES BOTH CN RAIL AND CP RAIL WILL UNDERTAKE DETAILED SIMULATIONS OF SPECIFIC GO TRAIN SCENARIOS TO DETERMINE THE LEVEL OF GO TRAIN SERVICE POSSIBLE FOR DIFFERENT TRACK REQUIREMENTS. THIS WILL DETERMINE WHAT LEVELS OF GO TRAIN SERVICE WOULD REQUIRE CONSTRUCTION OF NEW TRACKS IN AREAS SUCH AS THE ROYAL BOTANICAL GARDENS AND THE HUNTER STREET TUNNEL.

CONSULTATION. FURTHER CONSULTATION WITH INTEREST GROUPS, CITIZENS, TECHNICAL STAFF AND ELECTED OFFICIALS WILL OCCUR, PARTICULARLY DURING THE MUNICIPAL COUNCIL APPROVAL PROCESS AND PUBLIC REVIEW OF THE FINAL RECOMMENDATIONS.

DETAILED ANALYSIS AND EVALUATION: FURTHER ANALYSIS AND EVALUATION WILL OCCUR TO ENSURE THAT ALL THE TECHNICAL FACTORS AND PUBLIC INPUT ARE TAKEN INTO ACCOUNT BEFORE FINAL RECOMMENDATIONS ARE MADE. THE COMMENTS PROVIDED BY THE PUBLIC AT THIS INFORMATION CENTRE WILL BE PART OF THIS ANALYSIS.

ENVIRONMENTAL ASSESSMENT: AN ENVIRONMENTAL ASSESSMENT REPORT WHICH COMPILES ALL THE ALTERNATIVES, ANALYSIS AND EVALUATION DONE IN THE STUDY WILL BE PREPARED AND SUBMITTED TO THE MINISTRY OF THE ENVIRONMENT FOR GOVERNMENT AND PUBLIC REVIEW AND FINAL APPROVAL.

NEXT PUBLIC INFORMATION CENTRES: THE NEXT ROUND OF PUBLIC INFORMATION CENTRES IS SCHEDULED FOR SPRING 1988.

LIST OF GRAPHIC DISPLAY PANELS

The following map and photo panels were on display at each Information Centre but are unable to be reproduced in this report.

1:25000	Key Plan of Study Area
1 25000	Alternatives
1:2000	Existing/Future Conditions in Study Area (four panels plus one duplicate panel of central Hamilton)
1.2000	Existing Bus Routes (Hamilton)
C.P. Station	development concepts
C.N. Station	development concepts
1:500	Plan/Profile - C.P. Rail Hunter Street corridor
1·2000	C.N. Hamilton Yard Existing Conditions and Proposals for Development
Photomosaics	Rail Storage Yards (Potential GO Train Storage Sites)
1:2000	Waterdown Road/Highway 403 Interchange Alternatives
1:2000	Station Alternatives (Not Recommended): Kay Drage Park and King/Main/403
1.2000	Plan/Profile - Ferguson Avenue Loop Alternative
1 10000	Photomosaic - Alternatives

Environmental Assessment Act (Displays provided by the Ministry of the Environment)

APPENDIX B

MINUTES OF MEETINGS

MINUTES OF MEETING

GO TRAIN SERVICE EXPANSION PROGRAM
BURLINGTON TO HAMILTON STUDY

FILE: W.O. 1655-87

Time & Place. 9:30 a.m., Wednesday, October 28, 1987
Room 307, Burlington City Hall

Attendees:	B. Ogden	Ministry of Transportation
	H. Anders	Ministry of Transportation
	F. Goh	GO Transit
	J. Thoms	Commissioner of Planning, Hamilton-Wentworth
	J. Barr	Planning & Development Dept., Hamilton-Wentworth
	A. Calvert	Economic Development Dept., Hamilton-Wentworth
	M. Main	Director of Traffic Services, Hamilton
	J. Pavelka	Director of Public Works, Hamilton
	T. Dobbie	Planning Dept., Burlington
	B. Young	Transit Manager, Burlington Transit
	S. Wright	CMP/Barnard
	C. Kitchen	Ecoplans
	J. Sutherns	McCormick Rankin
	M. Scott	McCormick Rankin
	S. Schijns	McCormick Rankin

Purpose: To review the analysis and technical recommendations.

MINUTES

Item 1. Review of Alternatives

J. Sutherns reviewed the route and level of service alternatives, noting that Morrison Hershfield studied rail operations and [illegible] requirements but the results were tentative pending a detailed simulation of the alternatives by CN Rail and CP Rail.

Item 2: Review of Analysis

Mr. Sutherns went through the analysis undertaken, breaking it down by factor (see attached Agenda).

[illegible] [illegible] [illegible]. The preferred route in terms of transportation [illegible] was the [illegible] [illegible] and the ability to easily integrate [illegible] [illegible] service at the terminal was pointed out as a major factor in the analysis.

Economic Effects. S. Wright of CMP/Barnard addressed the economic impact of the service noting that improved GO Train service to [illegible] would [illegible] [illegible] [illegible] economic development of Hamilton. Due to the proximity of the CP TH&B station to the [illegible] core of Hamilton, it was more likely than the CN alternative to [illegible] or [illegible] the economic development of Hamilton. [illegible] J. Pavelka stated that the CP route should be more strongly [illegible] than was evident from the economic analysis chart. [illegible] Mr. Wright noted that [illegible] attractions such as Copps Coliseum [illegible] [illegible] would benefit from two-way GO service but [illegible] effects would be limited. M. Main pointed out that significant economic benefits were contingent on the provision of two-way service.

Costs. Mr. Sutherns reviewed the track plans and noted the Hunter Street tunnel, the CN Hamilton Yard and the Royal Botanical Gardens areas as zones of [illegible] [illegible]. T. Dobbie enquired about the [illegible] Road [illegible] crossing. Mr. Sutherns stated that it was under study and that a grade separation requirement was not likely to be triggered solely by the increase in GO traffic [illegible] and hence has not been included as a cost to GO.

Mr. Sutherns discussed the Hunter Street tunnel reconstruction [illegible], noting that the requirement for reconstruction was to be determined following a detailed simulation study of its operation [illegible] [illegible] GO service levels by CP Rail. The cost of the tunnel [illegible] was anticipated to be in the order of $40 million, with disruption due to construction limited to a city block at a time but lasting about two years in all.

Social Effects. Two areas of potential social effects were noted: noise and development pressure. The latter was a concern of the [illegible] neighbourhood while noise in residential areas west of the tunnel (in [illegible]) and at a layover yard is anticipated to be a [illegible] problem. Mr. Pavelka pointed out that rail traffic may have decreased over the years so that the new noise level is no worse than levels which previously existed.

The noise impact on recreational areas (such as R.B.G.) should be addressed, as well as construction noise.

Environmental Effects. Mr. Kitchen briefly outlined the four main areas of [illegible] environmental concern: the Royal Botanical Gardens, Hamilton Harbour, Sassafras Woods E.S.A., and Grindstone Creek.

Staging: Mr. Sutherns noted that it would be easier to extend GO Rail service eastward to the Niagara Peninsula along the CN rather than the CP route, and that no suitable interconnections existed between the two.

Ferguson Avenue: The Ferguson Avenue loop alternative implied a new alignment to connect with the CP tracks and grade separations with all main crossing roads. The resulting cost and social impact meant the alternative was not pursued in detail. Mr. Main suggested that tunnel reconstruction may not be necessary if one-way GO service via Ferguson Avenue was provided. Mr. Sutherns noted that the alternative could be reassessed if CP allowed a high level of one-way service through the existing tunnel.

Mr. Thoms enquired as to the conflicts between the Perimeter Road and the CN route. Mr. Sutherns replied that, in the CN Yard area, it is essentially a land use problem between the Perimeter Road, the Yard, GO Train expansion, the Waterfront Park and the Harbour.

Intermodal Options: Mr. Sutherns stated that options are available at both the CN and CP stations for initial, intermodal and joint venture development. Mr. Pavelka concurred with Mr. Sutherns that the development of the CP station was preferable to the CN.

Kay Drage Options: Two plans showed that accessibility of the station is not as good as at Waterdown and it is therefore not recommended at this point, although the lands are publicly owned and a station may be provided in the future, if required. Two concepts for a station between King and Main Streets had similar comments. Mr. Main requested plans of the concepts for City examination.

Waterdown Options: Mr. Sutherns noted that the Waterdown station site featured good access from Highway 403 (some interchange options were shown) and ample space for parking (upwards of 1000 spaces).

Item 3: Analysis

The Summary of Analysis chart was discussed with the cost and impact ranges reflecting the uncertainty of track requirements for certain levels of service.

Item 4: Recommendations

The attached recommendations were discussed. Concern was expressed about the shift at existing level of service to the CP station, as Mr. Thoms saw that no economic benefits to downtown would result without increased service and Mr. Main and Mr. Pavelka were concerned that the parking situation in the area is poor and parking space is decreasing. Mr. Sutherns noted that the implementation of the switch could take up to 5 years, with at least a year before the submission of an Environmental Assessment Report, another year for E.A. review and a year of design and construction.

Item 5: Future Course of Action

The upcoming meeting schedule was discussed and Mr. Dobbie was requested to arrange for a brief project presentation on November 16 at the Burlington Public Works Committee.

Public Information Centres are to be held November 23 and 25 at Central School in Hamilton and November 24 in Burlington City Hall.

Item 6: Other Business

No other business was discussed.

Minutes Prepared By,

S. Schijns, P. Eng.
McCORMICK RANKIN

SS:lec
Enc.

cc: Attendees
H. Schweinbenz
D [illegible]
H [illegible]
D McCleary
F [illegible]
F [illegible]
A [illegible]
V Abraham
J Gartner
J Hall
J Coates

GO TRAIN SERVICE EXPANSION PROGRAM
BURLINGTON TO HAMILTON

MEETING OF EXTERNAL TEAM

FRIDAY, NOVEMBER 6, 1987

9:30 A.M., ROOM 247, BURLINGTON CITY HALL

AGENDA

1) Summary of June Council/public review
2) Review of alternatives
3) Review of analysis of alternatives
    - o operation
    - o transportation effects
    - o economic development effects
    - o costs
    - o social effects
    - o natural environmental effects
4) Ancillary analysis
    - o station sites
    - o Ferguson Avenue alternative
5) Study recommendations
6) Future course of action
7) Any other business

MINUTES OF MEETING

GO TRAIN SERVICE EXPANSION PROGRAM
BURLINGTON TO HAMILTON STUDY

OUR FILE. W.O. 1655-87

Time & Place: 9:30 a.m., Friday, November 6, 1987
Room 247, Burlington City Hall

Attendees

B. Ogden	Ministry of Transportation
H. Mc[illegible]	Ministry of Transportation
[illegible]	GO Transit
G. P[illegible]	Canadian Pacific Ltd.
R. R[illegible]	VIA Rail Canada Inc.
J. C[illegible]	Ministry of the Environment
W. Gree[illegible]	Ministry of the Environment - Environmental Assessment Branch
W. Wilson	Ministry of Government Services/ Ministry of Housing
C. Burke	Ministry of Municipal Affairs - Parkway Belt Unit
J. Huehn	Environment Canada
T. Lam	Ontario Hydro
J. Hall	Halton Region Conservation Authority
B. Axon	Halton Region Conservation Authority
K. Dalrin	Hamilton Region Conservation Authority
L. Brennan	Regional Municipality of Hamilton-Wentworth, Department of Health Services
S. Wright	Cresap/Barnard
C. Kitchen	Ecoplans
A. MacMillan	Ecoplans
J. Sutherns	McCormick Rankin
M. Scott	McCormick Rankin
S. Schijns	McCormick Rankin

Purpose: To update the External Team on the analysis done since the last meeting and to review the information and technical recommendations being taken to councils and the public.

Discussion: (See attached agenda)

Item 1: J. Sutherns discussed the first round of public review, noting that all councils and the majority of the public identified full GO Train service at the CP/TH&B station as preferred. The current round of review is the second of three: the first in June 1987 to review alternatives, the current round to review the analysis and its consequent technical recommendations, and a final round to review the final study recommendations and details, anticipated to be in the Spring of 1988.

Item 2: Review of Alternatives

Mr. Sutherns reviewed the 1:2000 scale plans of the study area pointing out the alternative routes and areas of concern and potential impact. The study assumption of the extension of full GO Train service from Oakville to Burlington by 1992 was noted.

Item 3. Review of Analysis of Alternatives

Mr. Sutherns summarized the analysis of alternatives under the following factors:

Rail Operation: CN and CP have detailed the track requirements for "limited" and "full" GO service but intermediate levels of GO service have unknown track requirements. These will be determined by CN and CP's own detailed simulations.

Transportation Effects: The integration of local bus service with the GO terminus in Hamilton is easier to achieve and therefore preferred at the CP/TH&B station than at the CN terminal.

[illegible]mic Development Effects: The Hamilton economy is doing [illegible] at the moment and the expansion of GO Train service is not anticipated to affect it significantly.

Costs. - are dependent to a large extent on rail plant requireme[illegible] and costs for intermediate levels of service will await the railway studies. Capital requirements for full service (and ultimate infrastructure) are approximately $86 M for the CN route and $124 M for the CP alternative between Burlington and Hamilton.

Social Effects - are limited to noise impact, potential development pressure near stations and some site-specific effects on individual properties.

Natural Environment: C. Kitchen commented on the Natural Environmental [illegible], noting that environmental concerns are minimized through use of an existing corridor. Areas of concern include the Sassafras Woods at Waterdown Road, the Hidden Valley crossing, stream crossings en route, the Kay Drage Park/landfill site, and, most importantly, the Royal Botanical Gardens-Desjardins Canal zone.

No historic or archaeological sites were found to be affected by any of the alternatives.

Item 4: [illegible]ary Analysis

Mr. Sutherns reviewed the study's recommendation for the Waterdown [illegible], noting that reconstruction of the interchange there would be required. Station sites at Kay Drage Park and [illegible] were [illegible] and not recommended [illegible] the proposed [illegible] to remain [illegible]. Both the CN and CP TH&B terminals are [illegible] to intermodal stations.

The [illegible] Avenue Loop alternative requires grade separation [illegible] and road as well as some new rail alignment. The costs and [illegible] outweighed the benefits, leading to its rejection as [illegible].

Item 5: Study Recommendations

The recommendations, attached, were presented by Mr. Sutherns, [illegible] from the summary of analysis which showed that although track requirements were unknown, the CP route was preferred over the CN route in general.

Item 6: Future Course of Action

Public Information Centres will be held November 23 and 25 at central [illegible] Hamilton and on November 24 at Burlington City Hall. [illegible] will be made [illegible] the External Team will be [illegible] again in the Spring of 1988 to review the final recommendations.

Discussion

W. Wilson enquired as to whether the replacement of earth banks by retaining walls would [illegible] effects on nearby houses in the area west of the Hunter Street Tunnel. Mr. Sutherns promised to examine the question in future work.

In response to K. Dalrin's query, Mr. Sutherns stated that two locations where the extension of new fill into the harbour and Sunfish Pond would be analyzed and compared to use of retaining walls to prevent slope extension.

C. Burke requested that the requirements for property acquisition be identified on a plan.

Further discussion was in an informal manner using the various boards and plans to be shown in upcoming review sessions.

Minutes Prepared By

S. [illegible], P. Eng.
[illegible] RANKIN

SS:[illegible]
c. Attendees
Other External Team members
Project Team members

MINUTES OF MEETING

GO TRAIN SERVICE EXPANSION PROGRAM
BURLINGTON TO HAMILTON STUDY

FILE: W.O. 1655-87

Time & Place: 9:30 a.m. Monday, November 9, 1987
Halton Regional Offices

Present: Halton Planning and Public Works Committee
Halton staff representatives
Media representatives

F. Chung	GO Transit
B. Ogden	Ministry of Transportation
J. Sutherns	McCormick Rankin

Purpose: To advise the Halton Region elected representatives of the information to be taken to the public for review.

Minutes

Mr. Ogden summarized the purpose of the meeting and then Mr. Sutherns provided an overview of the study analysis and preliminary technical recommendations. This overview made use of a 1:8,000 aerial mosaic key plan and a series of overhead slides (copies of the slides are attached). Brochures describing the study were distributed.

Discussion of the project included the following:

- The Burlington open house (November 24th) falls on the same date as a Regional public meeting which is also being held in the City Hall
- Alderman Walter Mulkewich indicated that the Dover community is within the ward (Ward 1) that he represents. He enquired as follows
  - Is the King St. grade separation included as part of the GO expansion program? It was indicated that it was not a requisite of the program but that the possibility of a grade separation being required at some time was recognized as part of the study.
  - Has a noise analysis been carried out in the vicinity of the Dover community and is a barrier proposed? It was indicated that the noise analysis will be available for review at the public open houses but that a warrant had not been identified for the construction of a barrier.

- Will detailed plans be available at the open houses that illustrate the effects of the cuts and fills through the Highway 6 area? Yes.

  What was the coverage of the postal walk distribution of brochures? It was indicated that it was approximately as per the shaded study area shown on the brochure. It was agreed that the map showing the actual walks being used for distribution will be brought to the meeting with Burlington Public Works Committee on November 16th (Mr. Mulkewich is chairman of that Committee).

Following the Meeting:

- Mr. Mulkewich indicated that the extent of the presentation given to the Region was appropriate for the Burlington presentation.
- Mr. McCleary requested copies of the overhead slides for attachment to the minutes of the meeting.

Minutes Prepared By

J. S. Sutherns, P. Eng.
McCORMICK RANKIN

JSS:lec

MINUTES OF MEETING

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON

Our File: W.O. 1655-87

Time & Place: 2:00 p.m., Monday November 9, 1987;
Hamilton City Hall.

Present: Hamilton-Wentworth Transportation Services Committee
Regional Staff Representatives
Media Representatives

F. Chung	GO Transit
B. Ogden	Ministry of Transportation
J. S. Sutherns	McCormick Rankin
S. Schijns	McCormick Rankin

Purpose: To advise the Hamilton-Wentworth Region elected representatives of the information to be taken to the public for review.

MINUTES

Mr. Ogden summarized the purpose of the meeting and then Mr. Sutherns provided an overview of the study analysis and preliminary technical recommendations. This overview made use of a 1:8000 aerial mosaic key plan, a 1:2000 plan of central Hamilton, and a series of overhead slides (copies of the slides are attached). Brochures describing the study were distributed.

Discussion of the project included the following:

Councillor Ross asked who would be making the decision regarding implementation of the study recommendations.
Mr. Ogden replied that decisions on funding and implementation of any recommendations would be made by elected representatives at the provincial level, in consultation with GO Transit and the local municipalities. Mrs. Chung pointed out that, although the proponent of the project is GO Transit, GO is part of the Ministry of Transportation and subject to the allocation of funding by the Minister.

Councillor Hinkly enquired as to how individuals or groups could challenge the study process or recommendations.
Mr. Ogden replied that full and open consultation is encouraged with interested groups and individuals throughout the study, with public information centres, correspondence and meetings all used to ensure that all viewpoints are accounted for in the results of the analysis. There are also avenues available through the Environmental Assessment process such as written submissions and requests for a hearing.
A further option is voicing concerns to local and provincial elected representatives.

Councillor Christopherson stated that the CN Station had greater potential than was indicated in the analysis, both as a local development tool and as a strong link to the proposed Waterfront Park. Mr. Sutherns replied that the CP Station had a significantly better location in terms of economic development impact in the overall regional context, and that Waterfront Park users would likely not be major GO train users, as GO service on weekends is limited and the station was not immediately adjacent to the Park. The Councillor requested that the Study Team ensure that the Waterfront Study Group was supplied with the appropriate information and had an opportunity to provide their input.

Councillor Gallagher stated that the priority for the Region is to transport people into rather than out of Hamilton.

Minutes Prepared by.

Stephen Schijns

S. Schijns
McCORMICK RANKIN

cc B. Ogden
F. Chung

MINUTES OF MEETING

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

OUR FILE. W.O. 1655-87

Time & Place. 3 00 p.m. Monday, November 16, 1987
Hamilton City Hall

Present: Hamilton Transport and Environment Committee
City Staff Representatives

B. Ogden	Ministry of Transportation
J. Sutherns	McCormick Rankin
M. Scott	McCormick Rankin
S. Schijns	McCormick Rankin

Purpose To advise the Hamilton elected representatives of the information to be taken to the public for review.

Minutes Mr. Ogden summarized the purpose of the presentation and Mr. Sutherns provided an overview of the study analysis and [illegible]. The [illegible] made use of a 1:8000 aerial mosaic key plan and a 1:2000 plan of central Hamilton, as well as two overhead slides (copies attached). Brochure No. 2, a key plan and the preliminary technical recommendations were distributed to the councillors.

The presentation was received with little comment and Mr. Sutherns clarified a number of points in response to questions. Councillor [illegible] wished to ensure that in the analysis of alternatives the proposed Waterfront Park was considered to be negatively impacted by the addition of trains on the CN route alternative.

Minutes Prepared By

SS.lec

S. Schijns, P. Eng
McCORMICK RANKIN

CC: B. Ogden

MINUTES OF MEETING

GO TRAIN SERVICE EXPANSION PROGRAM
BURLINGTON TO HAMILTON STUDY

OUR FILE W.O. 1655-87

Time & Place: 7:00 p.m. Monday, November 16, 1987
Room 247, Burlington City Hall

Present: Burlington Public Works Committee
City Staff representatives

B. Ogden	Ministry of Transportation
F. Chung	GO Transit
J. Sutherns	McCormick Rankin
S. Schijns	McCormick Rankin

Purpose To advise the Burlington councillors of the information to be taken to the public for review.

MINUTES.

Mr. Sutherns made a brief presentation of the study [illegible] technical recommendations, using a 1:8000 aerial [illegible] and the preliminary [illegible] were [illegible].

[illegible] was expressed by [illegible] that [illegible] in Hamilton could delay [illegible] service to Burlington. Mr. Sutherns assured the Councillor that the two projects were independent in terms of timing.

Councillor [illegible] enquired about GO train layover sites. Ms Chung informed the [illegible] that no decision had been made on the storage of GO trains for the [illegible] in Burlington [illegible] and Mr. Sutherns advised that layover sites in Hamilton were being considered along with the CN Aldershot Yard for storage related to improved GO service to Hamilton.

Councillor [illegible] was assured by Mr. Sutherns that a [illegible] Drive station site was not recommended and would likely not replace Aldershot station if the latter were [illegible].

Councillor [illegible] asked whether a grade separation between the CN tracks and King Road would be provided. Mr. Sutherns indicated that the costs of such a [illegible] would be part of the study [illegible] but that the grade separation was a [illegible] priority compared to other [illegible] and would [illegible] not be recommended as a GO Transit undertaking. The Councillor also asked that peak period traffic at Aldershot station be examined.

Minutes Prepared By

SS.lec

S. Schijns, P. Eng
McCORMICK RANKIN

CC B. Ogden

APPENDIX C

[illegible] EIS

24.11.87

Access to buses crucial for GO trains: consultant

By PAUL WILSON
The Spectator

IF YOU take the GO train from Hamilton, you're in select company. Only 170 people catch the three GO trains that leave the James Street North CN station each morning for Toronto. More than 10 times that number board the buses.

But the future is trains, away from highways that get more [illegible]gested each year. And that's why the GO gang is in town.

Earlier this month, they told the region's transportation committee the three trains should be switched from James North to the TH&B Sta[illegible] in the heart of downtown. And they say another GO station should be constructed at Waterdown Road and Highway 403.

Now the Ministry of Transportation and its consultants are ready to hear what the man on the street thinks.

They've propped up about 20 charts and photos on wooden chairs in the gym of Central School behind city hall. Half a dozen staff stood by for questions yesterday and they return tomorrow from 3 p.m. to 9 p.m.

There's also an open house at Burlington city hall today, 3 p.m. to 9 p.m.

"Put it right downtown at the TH&B or don't bother with it at all," said Duke Street resident Margaret Goertzen. "There's no way I'd go up to James North. And I wouldn't want to park my car there."

But some who take the train now like the easy parking and were to present a petition in favor of leaving the GO service where it is.

Marvin Caplan, a downtown businessman, looked over the displays and said he wasn't pleased with either station.

"If it's just a choice between TH&B and the CN station, there's no question it's TH&B," he said. But even better, he claims, would be one further east at Ferguson Avenue.

"There's no eastern anchor for downtown. The city should have asked these guys to look at that."

But Brian Ogden, project manager with the Ministry of Transportation, says the Hunter Street TH&B station is a natural. "The building's there, the land's there and it's a good location. A station in itself doesn't alter an area. If business is moving one way in town, a station doesn't move it the other way."

He said two main factors gave TH&B the edge over the CN station. One is better links with the HSR, both the Mountain routes and the main east-west routes.

The other reason is economic. According to the GO study figures, there will be 10 times as much office and retail space within a 10-minute walk of the TH&B.

Full GO service, with trains every 20 minutes in rush hour and every hour at other times, isn't part of the present recommendation. That depends on ridership. "Hamilton may not warrant full service for 30 or 40 years," Mr. Ogden said.

Brian Ogden. TH&B station

ONTARIO GOVERNMENT NOTICE

GO TRAIN SERVICE EXPANSION PROGRAM —BURLINGTON TO HAMILTON STUDY

BACKGROUND

The Government of Ontario is extending full GO Train service from Oakville to Burlington and a study to assess the further expansion of service to Hamilton is underway

The study is a joint Provincial/Municipal undertaking involving the Ministry of Transportation GO Transit and the Regional Municipalities of Halton and Hamilton-Wentworth Other involved in the study include local municipal staff government agencies technical organizations interest groups, elected officials and interested individuals The study is subject to the Environmental Assessment Act of Ontario

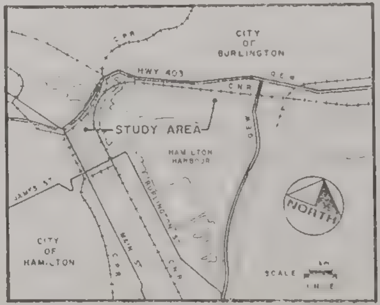
PUBLIC PARTICIPATION

The alternatives under study were introduced at a series of public information centres in June 1987 A second round of information centres has been arranged at which any interested persons may review and comment on the analysis undertaken since June Technical recommendations will be available for review at the information centres You are encouraged to attend one of the following information centres to express your views

Monday, Nov 23, 1987
3 00 p m to 9 00 p m
Central Public School gymnasium
75 Hunter St W
Hamilton, Ontario

Tuesday, Nov 24, 1987
3 00 p m to 9 00 p m
Room 247 Burlington City Hall
426 Brant St
Burlington, Ontario

Wednesday, Nov 25, 1987
3 00 p m to 9 00 p m
Central Public School gymnasium
75 Hunter St W
Hamilton, Ontario



For further information please contact:

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L5G 3N6
Tel: 274-3477

Ministry of Transportation

Hamilton Spectator Wed. Nov 18/87

PAGE 4 Hamilton Journal, Wednesday, November 18, 1987

Costlier TH & B terminal preferred for GO train extension

by Allan Janssen
Staff Writer

The old TH&B station would be the best location for a GO Train terminal if rail service between Toronto and Hamilton is extended, a study suggests

A project team laying the tracks for extended service says the vacant terminal at James and Hunter Streets downtown would be better than the existing C.N. station on Catharine Street North

The team, comprised of officials from GO Transit, the Ontario Ministry of Transportation and Communications, and various independent consultants, has released its initial recommendations and are now gearing for public input on the matter

The recommendations suggest using the CN line from Toronto but switching to the CP line once in Hamilton, using the TH&B station, clearing the way for another terminal at Waterdown Road, and making structural changes to trackbeds and tunnels as required by the level of service decided upon

The public will get its chance to voice opinions on the recommendations at two public meetings to be held Nov 23 and 25, from 3 p.m to 9 p.m. at Central Public School

Officials expect there to be some concern about the use of the CP line since it borders on more residential property and will be more disruptive to local neighborhoods than the CN line which follows the harborfront

ECONOMIC CONDITIONS

But John Sutherns, the project manager, says using that line and the TH&B station is preferable to the CN line and terminal because of the economic conditions of the two areas

The project team's study shows almost 22,000 people work within 750 meters of the TH&B station (10 minutes walk) while only 7,330 work near the CN station Almost 13,000 people live within 750 meters of the TH&B station while less than 7,000 live near the CN station

"There were many factors we looked at," Mr. Sutherns told a meeting of the region's transportation services committee last week He [illegible] committee [illegible] statistics [illegible] the TH&B station is pre[illegible] terms of tourism and potential commercial and residential development

[illegible] the TH&B station to handle [illegible] train service between Toronto and Hamilton (trains 20 minutes apart during peak periods, one hour apart the rest of the day, going in both directions) would cost $30 million more than the CN station

$141 MILLION

The total price tag for full service at the TH&B station would [illegible] out of the CN station it would cost $112 million

At the public information sessions during the summer, before [illegible] recommendations were made, Mr Sutherns said support for the TH&B station outnumbered support for the existing CN station four to one Over 200 people attended those sessions.

Though final recommendations on extended GO Train service will go to the ministry February 1988, Bryan Ogden, a ministry spokesman, says an environmental hearing may take 18 months before construction begins Since alterations

Continued to page 12

TH&B site...

Continued from Page 4

to the tracks near the Royal Botanical Gardens may mean the cutting down of some trees and construction of rail supports, there may be some environmental concerns to be addressed

Regional councillors praised the project team's work and expressed enthusiasm for the project.

11-11-87

Consultants GO with TH&B station

Terminal deemed best for rail link

By ROBERT MELNBARDIS
The Spectator

TECHNICAL CONSULTANTS studying the expansion of GO train service between Burlington and Hamilton have chosen the old TH&B Hunter Street East station as the best terminus.

The project managers said yesterday the CPR-TH&B corridor to that station is technically better than the CNR corridor to the CN station on James Street North.

City and regional council have selected the Hunter Street station as the best one to use.

Brian Ogden of the Ministry of Transportation and consultant John Sutherns told the regional transportation services committee yesterday a GO train terminus at the Hunter Street station will have more impact on Hamilton's economy.

The public will have a chance to ask questions and comment on the project team's technical recommendations at upcoming information centres.

The team hopes to have a final recommendation for provincial government approval by June. An environmental assessment hearing would follow.

In selecting the technically preferred route and station, the project team examined impact on residents, the environment, and local transportation services.

Both routes would involve cutting down trees, and removing or adding earth to areas in the Royal Botanical Gardens and in Cootes Paradise because the railway track corridor would be expanded by about 4.3 metres (14 feet).

The old Toronto, Hamilton & Buffalo Railway station is closer to the downtown concentration of Hamilton Street Railway operations.

An examination of a 750-metre (2,500-foot) radius around each station shows the Hunter Street area has twice as many residents and three times as many workers as the James Street North area and is closer to many main tourist attractions.

The existing service of three trains a day to the CN station costs $10 million annually. If that service was moved to the Hunter Street station, it would cost about $20 million each year.

Expanding full GO train service to the Hunter stiion — one train every 20 minutes at peak periods and every hour during off-peak times — will cost about $140 million compared with about $110 million for the CN station.

The first information centre will be in the Central Public School gymnasium on Hunter Street West Nov 23; the second at Burlington city hall on Brant Street Nov 24 and the third in the Central Public School gym Nov. 25.

All will be open between 3 p.m. and 9 p.m. Staff from the Ministry of Transportation, GO Transit, Halton and Hamilton-Wentworth will be available to answer questions.

ESTABLISHED 1846, Published at
44 Frid Street, Hamilton, Ontario,
L8N 3G3, by Southam Inc., proprietor

It can be done

GO to downtown is a step closer

The Hamilton-Wentworth council should be happy to hear the technical consultants' recommendation to bring full GO train service to the TH&B station in downtown Hamilton. Everyone else in the region also should be pleased.

The researchers' advice conforms with the council's choice for a main Hamilton GO terminal, a choice extracted from common sense and sound planning principles. The alternative, the old CN station on James Street North, is too far from the centre of things, especially from the hub of the regional bus network at Gore Park.

Just as important as the technicians' choice is the fact that Hamilton-Wentworth now has a solid starting point for building the very necessary commuter rail link with Toronto.

The region's case for full GO service now has graduated from theorizing and guessing to the more tangible realm of hard facts — track routes and capacities, cost estimates and comparisons (TH&B vs. CN), and a timetable for the political preliminaries that will be the overture to the pick, shovel and bulldozer work.

The service Hamilton-Wentworth wants — a train every hour, every 20 minutes in rush hours — has become one measurable step nearer to the vaguely-defined provincial deadline of the mid-1990s, now that the engineers have equipped the politicians with the facts they need to make decisions.

People of the Hamilton-Wentworth and Halton regions will be able to examine the plans and question local and provincial officials at open-house information centres in Hamilton and Burlington later this month.

Full GO train service still is a long way off. The provincial cabinet must give its blessing to a final plan (and find the money to pay for it). There will be environmental hearings and considerable engineering work to design a route, part of it underground, through Hamilton's heavily built-up west end.

But in finding the GO route to the TH&B station not only possible but feasible, the Ontario technical study team has handed Hamilton-Wentworth an appealing bonus to offer investors and developers.

A fast, frequent, dependable passenger connection to Toronto brings this region to the doorstep of Ontario's biggest pool of shoppers, workers, customers and suppliers. The report automatically makes Hamilton-Wentworth a more appealing place for new businesses to locate and for Toronto workers, trying to escape Metro's outrageous housing prices, to live.

This week's significant advance on the GO front was accompanied by a healthy new attitude toward intercity bus service. The regional transportation committee, which was prepared to sell Canada Coach Lines in October, has asked officials to suggest ideas for bringing the deficit-ridden Hamilton Street Railway subsidiary back to life.

Those officials haven't been doing badly lately. Canada Coach's deficit has been cut down from $1.4 million in 1983 to $210,000 now. But elderly buses need replacing and the politicians rightly fear the debts will rise again unless Canada Coach can find ways to reduce costs and bring in more paying passengers.

The effort is well worth making. Although it loses money, as many public services do, Canada Coach is one of Hamilton-Wentworth's few visible claims to the status of economic capital of the Ontario hinterland from the Niagara to the Grand.

Like mighty diesel billboards, rattling through the streets of St. Catharines or Brantford, the Canada Coach Line buses advertise Hamilton's presence to hundreds of thousands of people daily. Even if most of the people who see the buses prefer to travel in their own cars, they're reminded of Hamilton and Hamilton's stores, restaurants and showplaces — a message the region and local businesses might be wise to reinforce with back-of-the-bus ads.

While campaigning relentlessly for the full GO service it needs, the region shouldn't lose sight of commuter service east, west and south of Hamilton. Toronto is not the only direction the community faces.

3250
871126 TORONTO CBL 07:30 NEWS

SUBJECT: HAMILTON'S GO-TRAIN TERMINAL

ANNOUNCER: . . . REGIONAL AND CITY COUNCILS FAVOR SWITCHING THE GO-TRAIN TERMINAL FROM THE CN STATION TO THE OLD TH&B STATION. BUT MORE THAN TWO-THIRDS OF THE COMMUTERS WANT TO KEEP THE TERMINAL AT THE CN STATION, AND THEY SAY IT'S TIME THERE WAS PUBLIC DEBATE ON THE ISSUE. PAUL KIDD REPORTS.

P. KIDD. THAT'S ONE OF THE DAILY GO-TRAINS THAT LINK HAMILTON WITH TORONTO DURING THE MORNING AND THE EVENING RUSH HOURS. LAST NIGHT SOME OF THE 200 COMMUTERS, CARRYING A PETITION SIGNED BY TWO-THIRDS OF THEIR FELLOW PASSENGERS, WENT TO A GO-TRANSIT INFORMATION MEETING. OFFICIALS, USING MAPS AND GRAPHS, TRIED TO CONVINCE THE COMMUTERS THAT MOVING THE GO-TRAIN TERMINAL FROM THE CN TO STATION TO THE TH&B STATION WAS THE BEST TECHNICAL CHOICE. THE CONSULTING ENGINEER FOR THE PROJECT, JOHN SUTHENS, SAYS THE ONLY WAY THE PLANNERS' CHOICE CAN BE CHANGED IS BY POINTING OUT OF TECHNICAL ERRORS OR OMISSIONS

J. SUTHENS: . . . THE DECISION IS A COMBINATION OF THE TECHNICAL ANALYSIS AND THE PUBLIC AND COMMUNITY OPINION

P. KIDD: WARREN SUTHERLAND, REPRESENTING THE COMMUTERS, SAYS IT'S TIME LOCAL POLITICIANS LISTEN TO THE PEOPLE WHO RIDE THE GO-TRAINS

W. SUTHERLAND. I THINK THEIR TECHNICAL ARGUMENTS ARE NOT PARTICULARLY SOUND IN MY OPINION, AND ALTHOUGH I AM NOT AN ENGINEER, THEY DON'T SOUND PARTICULARLY SOUND TO ME. CERTAINLY THEY STILL HAVE FAILED TO ASK THE PEOPLE WHO IT MOST INTIMATELY AFFECTS, AND THAT'S THE TRAVELLERS

P. KIDD. HAMILTON COMMUTERS SAY THE INFORMATION CENTERS ARE A DELIBERATE ATTEMPT TO STOP PUBLIC DEBATE ON THE CONTROVERSIAL GO-TRAIN ISSUE. PAUL KIDD, CBC NEWS, HAMILTON. 26

30
87.11.25 15:06 - MM 3250 233142 35

3250
871124 TORONTO CBL 06.60 EXCERPT FROM 'METRO MORNING'

SUBJECT: RELOCATION OF THE GO TRANSIT STATION

-HOST: JOE COTE
-GUEST: WARREN SUTHERLAND - COMMUTER

JOE COTE: THE GO TRANSIT WANTS TO MOVE ITS HAMILTON LOCATION OR HAMILTON STATION FROM THE OUTSKIRTS OF TOWN TO A DOWNTOWN SPOT. THE MOVE IS MEANT TO IMPROVE SERVICE TO THE PUBLIC. THE LOCAL COMMUTERS ARE NOT SOLD ON THE IDEA. WARREN SUTHERLAND HAS BEEN COMMUTING BETWEEN HAMILTON AND TORONTO FOR 18 YEARS NOW AND WARREN SUTHERLAND IS ON THE LINE. GOOD MORNING

WARREN SUTHERLAND: GOOD MORNING, JOE

COTE: WHAT ARE THESE PLANS THAT GO TRANSIT HAS IN HAMILTON?

SUTHERLAND. WELL, WE UNDERSTAND THAT THE PLAN IS TO MOVE THE EXISTING GO STATION WHICH IS NOW LOCATED AT THE FORT JAMES STREET ON THE CN TRACKS UP TO RELATIVELY AN UNEL

TRACK AND THE OLD T.H & B. RAILWAY STATION ON HUNTER STREET IN HAMILTON

COTE: THAT'S THE OLD TORONTO, HAMILTON, AND BUFFALO RAILWAY STATION?

SUTHERLAND: THAT'S RIGHT.

COTE: WHAT DIFFERENCE DOES THAT MAKE TO YOU AS A COMMUTER?

SUTHERLAND: WELL, FOR US IT APPEARS THAT IT'S NOT A PARTICULARLY GOOD MOVE. THE LOCATION WE HAVE NOW DOWN ON JAMES STREET THERE'S AMPLE PARKING AND IN FACT PARKING IS FREE FOR US AND THERE ARE A NUMBER OF ISSUES. COST, PARKING, ENVIRONMENT AND CONVENIENCE THAT WE DON'T THINK WILL BE BEST SERVED FOR THE KEEPING COMMUTERS.

COTE: YOU SAY ON THE QUESTION OF PARKING, WILL IT BE A BIT HARDER OR MORE EXPENSIVE TO PARK UP AT THE T H & B. STATION.

SUTHERLAND: WELL, IN FACT THERE IS NO PARKING UP AT THE T.H.& B STATION. THEY'RE PROPOSING ALSO TO ADD A NEW STOP, A NEW LOCATION IN WATERDOWN WHERE THERE WILL BE SUFFICIENT PARKING BUT I MEAN WITH ALL THE PEOPLE THAT CURRENTLY DRIVE TO THE EXISTING STATION WE'LL HAVE TO DRIVE OUT TO WATERDOWN TO PARK THE CAR AND CATCH THE TRAIN THERE. THAT'S ABOUT A 15 MINUTE DRIVE FOR MOST OF US.

COTE: AND THE ENVIRONMENTAL CONCERNS THAT [illegible] HAVE MR. SUTHERLAND?

SUTHERLAND. WELL, WE DON'T FEEL THAT THE PEOPLE [illegible] WILL BE AFFECTED BY THIS AND THAT'S PARTICULARLY THE PEOPLE THAT, [illegible] PROPERTY ADJOIN THE NEW PROPOSED LINE HAVE BEEN PROPERLY ADVISED OF THE THE IMPACT, THE ENVIRONMENTAL IMPACT WITH THE NOISE, ET CETERA. WE'RE TOLD THAT THEY WERE JUST INFORMED A WEEK AGO BY DROPPING A NOTICE IN THEIR MAILBOX AND WE THINK THAT THE IMPACT [illegible] ALSO WE'RE TOLD THE ADDITIONAL NOISE LEVEL [illegible] WHOSE PROPERTY ADJOINS THE NEW [illegible] TRACK. THE AVERAGE NOISE LEVEL WILL GO UP [illegible] AND I DON'T THINK THAT'S VERY MUCH CONSOLATION FOR THE [illegible] BY A GO TRAIN TO BE TOLD THAT OH THE AVERAGE NOISE LEVEL HAS ONLY INCREASED BY [illegible] WE'RE TALKING ABOUT A TRAIN GOING BY MAKING THE [illegible] HE DOESN'T CARE WHAT THE AVERAGE NOISE LEVEL IS [illegible] WHOLE DAY. JUST THE FACT THAT THERE'S A LOT OF NOISE WHEN THE TRAIN GOES BY.

COTE. AND YOU'RE A GO TRANSIT CUSTOMER, AREN'T YOU? I MEAN WERE YOU AND OTHER PEOPLE WHO USE THE SERVICE SO FREQUENTLY ADVISED OR CONSULTED AT ALL

SUTHERLAND: WELL, NONE OF THE PEOPLE THAT [illegible] SPOKEN TO ON THE TRAIN AND WE'VE TALKED [illegible] COMMUTERS WERE AWARE OF THE CHANGE AND IN FACT [illegible] TALKED TO A FULL 92 PERCENT ARE OPPOSED TO THE CHANGE

COTE: DO YOU HAVE ANY IDEA WHY THEY [illegible] IT?

[illegible] THEY SAY IT [illegible] CONVENIENCE AND [illegible] SURE. WE DON'T AGREE THAT IT'S A GOOD [illegible] AT ALL.

[illegible] SO YOU'VE GOT NO WAY OF [illegible] WHAT THEY'RE SAYING [illegible] CONVENIENCE AND SERVICE?

SUTHERLAND THAT'S ABOUT IT.

COTE NO SUSPICIONS?

SUTHERLAND: WELL, WE THINK ... OUR SUSPICIONS ARE THAT THE PEOPLE THAT REALLY WANT THIS ARE THE DOWNTOWN MERCHANTS WHO FEEL, WHO FEEL THERE'S GOING TO BE HUNDREDS OF PEOPLE POURING IN ON THE GO TRAINS DOWNTOWN WITH THEIR POCKETS FULL OF MONEY, I GUESS

COTE: CAN YOU DO ANYTHING ABOUT THIS, MR SUTHERLAND? YOU'RE SORT OF AN UNOFFICIAL LEADER OF A BAND OF GO TRANSIT COMMUTERS FROM THE HAMILTON AREA. CAN YOU DO ANYTHING ABOUT IT?

SUTHERLAND: WELL, I THINK AT THE HEARING LAST NIGHT WE VOICED OUR CONCERNS AND I GUESS IF THAT DOESN'T WORK WE'LL HAVE TO SEE IF WE CAN GET A LITTLE MORE POLITICAL CLOUT

COTE: WHAT DID GO TRANSIT SAY AT THAT MEETING LAST NIGHT?

SUTHERLAND: WELL, I THINK ... WE LEFT THE MEETING UNCONVINCED THAT THEIR REASONING WAS, WAS REALLY VALID AND THAT THEY LISTENED TO WHAT WE HAD TO SAY.

COTE: YEAH. THAT'S ALL THEY DID. IS IT? LISTEN. YOU DIDN'T GET A SENSE THAT MAYBE THEY REALIZED YOUR CONCERNS AND THE SIZE OF YOUR CONCERN?

SUTHERLAND: WE GOT THE SENSE THAT IT WAS A "FAIT ACCOMPLI"

COTE: OKAY. THANK YOU, MR. SUTHERLAND.

SUTHERLAND: YOU'RE WELCOME.

COTE: GOOD-BYE. WARREN SUTHERLAND HAS BEEN COMMUTING BETWEEN HAMILTON AND TORONTO FOR ... THESE PAST 15 YEARS AND HE SPEAKS FOR A BUNCH OF HIS COLLEAGUES WHO DO THAT OUT OF THE HAMILTON AREA. THE STATION IS BEING MOVED THERE FROM THE OLD STATION, THE CNR STATION ON THE OUTSKIRTS OF HAMILTON TO A DOWNTOWN LOCATION, THE OLD TORONTO, HAMILTON AND BUFFALO, THE OLD T.H.& B. STATION 26

NOV 2

A6 THE SPECTATOR, FRIDAY, DECEMBER 4 1987

ESTABLISHED 1846, Published at
44 Frid Street, Hamilton Ontario,
L8N 3G3 by Southam Inc., proprietor

GO trains to catch

Get message across

Hamilton and area citizens didn't exactly line up for three public meetings held last week to discuss expanded GO Transit train service between Burlington and Hamilton. The six-hour public forums, two in Hamilton and one in Burlington, were widely advertised. But only about 400 people attended.

Measured against the economic benefits and commuter convenience offered by more frequent trains, the relative trickle of interest came as something of a surprise and a disappointment.

Many people, perhaps, view the project as too distant on the horizon. It could be that most commuters, accustomed to taking the express GO buses operating on a frequent schedule between downtown Hamilton and Toronto, haven't considered the train.

Whatever the reason, it was unfortunate more interest wasn't shown. Project manager Brian Ogden, for instance, said Hamilton may not warrant full rail service for 30 or 40 years. The government could presumably cite the mediocre turnout in support of that timetable if it chose to.

Those who attended are reported to have preferred the TH and B station as the downtown Hamilton terminus, rather than the CN station on James Street North, by a 4-1 margin. The popular sentiment is shared by GO staff, who have chosen the TH and B as the best alternative and hope to have a final recommendation for provincial government approval in late spring.

One of the concerns on the minds of people, evidently, is adequate parking at whatever station is adopted. GO officials, however, emphasize the value of commuters arriving by public transit rather than in their cars.

Mr. Ogden noted the TH and B, besides its close proximity to the heart of downtown, has the advantage of being linked much more closely to existing Hamilton Street Railway routes than the James Street North station.

Hamiltonians reluctant to take the bus to reach the trains may have to reconsider. The city already faces a parking shortage downtown.

With commercial and retail development in the core growing rapidly, it will be difficult, if not impossible, to find a major new parking area for GO commuters at either station.

GO expansion plans include a new drive-in station at Waterdown Road, serving commuters from Aldershot, Flamborough, Dundas and Ancaster. Some people feel the Waterdown station should be built before service into Hamilton is moved from the CN station to the TH and B

Citizens who didn't attend missed an opportunity to discuss these and many other issues at the forums, which Mr. Ogden described as the most critical time for public opinion in the planning process

The seeming indifference to a better GO system is puzzling given the increasingly serious traffic congestion between Hamilton and Toronto. Last week, the provincial auditor said the widening of the Queen Elizabeth Way west of Toronto and extension of Highway 403 are proceeding so slowly that traffic on the QEW will be tied up for another 15 years.

Improved GO trains are essential to help prevent the Golden Horseshoe from strangling in road traffic. People can help to get that message across by making sure they attend the final public meetings next year.

APPENDIX D

INTEREST GROUP REPRESENTATIVES
ATTENDING INFORMATION CENTRES

INTEREST GROUP REPRESENTATIVES ATTENDING SECOND ROUND OF PUBLIC INFORMATION CENTRES

HAMILTON (November 23 and 25, 1987)

Don Jaffray	Social Planning and Research Council of Hamilton
Susan Ginn	Ontario March of Dimes
Kenneth Post	McMaster University
Marvin Caplan	Downtown Hamilton Business Improvement Area; Terminal Towers Merchants Association
Gabriel Etele	Downtown Hamilton Business Improvement Area
David J. Cuming	Architectural Conservancy of Ontario, Hamilton-Niagara Branch
R.A. Edwards	Hamilton Harbour Commission
David J. Scott	Transport 2000 Ontario
Janet Huehn	Environment Canada
A.H. Lomax	Hamilton CAPIC (Central Area Plan Implementation Committee; Hamilton Auto Club)
G.S. Morrow	Durand Neighbourhood Association
"	Corktown Neighbourhood Association
Diane G. Dent	L.A.C.A.C.
Vince Mauceri	Hamilton Street Railway
G. Langham	Conserver Society Inc.
L. Lee Kirkby	Hamilton Construction Association; Hamilton Chamber of Commerce Transportation Committee
Colin Isaacs	Pollution Probe
Rick Clark	Central Public School; Allenby Public School
Sister Bernadetta	St. Mark's Church
G.L. Simmons	Bay Area Residents
"	Beth Jacob Cemetery

BURLINGTON (November 24, 1987)

Allen Paterson	Royal Botanical Gardens
John Stringer, Rob Dobos	Hamilton Naturalists Club
H.J. Hutter	KPM Industries
T.T. Demeny	King Truck Centre
Chris Burke	Ministry of Municipal Affairs, Parkway Belt Unit
J.R. Simpson	Chambers and Co
Mike Lindsay	Upper Canada Railway Society
"	Metro Hamilton Real Estate Board
Hugh Eisler	Stelco Inc
C. Mannone	for Cam Jackson, Burlington South M.P.P

Appendix K

Report on Third Round of Public Involvement

NOTE:

In the interests of brevity, attendance registers and copies of comment sheets received at the Public Information Centres are omitted from this Appendix. Published copies of the full report on each round of public involvement, including copies of each comment sheet received, are available for reference in the Urban Municipal Collection of the Hamilton Public Library, and are on file with the Clerks of the Region of Hamilton-Wentworth, the Region of Halton, the City of Hamilton, and the City of Burlington. The original comment sheets are held on file at GO Transit offices, 1120 Finch Avenue West, Downsview, Ontario.

GO TRAIN SERVICE EXPANSION PROGRAM
BURLINGTON TO HAMILTON STUDY

SUMMARY REPORT ON
THIRD ROUND OF PUBLIC INVOLVEMENT
MAY-JUNE 1988

McCORMICK RANKIN

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SUMMARY OF COMMENTS 6

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APPENDIX A PANELS DISPLAYED AT INFORMATION CENTRES
APPENDIX B MINUTES OF MEETINGS
APPENDIX C MEDIA REPORTS
APPENDIX D ATTENDANCE REGISTERS AND COMMENT SHEETS
  APPENDIX D1 TUESDAY MAY 31, 1988 - HAMILTON
  APPENDIX D2 WEDNESDAY JUNE 1, 1988 - BURLINGTON
  APPENDIX D3 THURSDAY JUNE 2, 1988 - HAMILTON

INTRODUCTION

This report summarizes the third round of review and public involvement in the GO Train Service Expansion Program - Burlington to Hamilton Study. The third round of review coincided with the completion of the third stage of the study.

Alternatives had been identified in Spring of 1987 and reviewed in June 1987. The second stage of the study saw the analysis of alternatives and review of preliminary technical recommendations in November, 1987. Refinement and detailed study throughout early 1988 led to formulation of the final technical recommendations and preliminary design of the route and stations, comprising the third study stage.

Meetings and correspondence occurred throughout the third stage of the study with Interest Groups, Technical Agencies, municipal staff and interested members of the Public. During the review period, the technical recommendations were brought to the GO Transit Board of Directors, the Minister of Transportation, appropriate local municipal Committees of Council, government agencies, municipal staff, and the Public at three Public Information Centres (two in Hamilton and one in Burlington).

The purpose of the third round of public involvement may be summarized as:

- to develop awareness and understanding of the project and study process;
- to allow a public review of the work carried out in the study;
- to obtain reactions and comments from all interested parties concerning the study analysis and final technical recommendations;
- to ensure that public concerns are addressed during the study.

SCHEDULE OF MEETINGS

The Project Team met with a number of concerned groups during the third stage of the study, and these are summarized below, separate from those presentations and public sessions that occurred during the review period.

Niagara Region Public Works Committee	December [illegible] 1987
Conservation Authorities, Royal Botanical Gardens	January 18, 1988 and May 5, 1988
[illegible] South Heritage District Committee	February 16, 1988
Hamilton Local Architectural Conservancy Advisory Committee - CP TH&B Station Subcommittee	February 18, 1988
Hamilton Social Planning and Research Council	February 24, 1988
Hamilton Central Area Plan Implementation Committee	March 24, 1988 and March 30, 1988
Halton Ecological and Environmental Advisory Committee	May 11, 1988

In addition to meetings with municipal and rail company staff, a series of four meetings were held between January 15 and March 3, 1988 with municipal staff and Bus operators to prepare a feasibility plan for the redevelopment of the CP TH&B Station as an intermodal terminus.

The meetings at which the study results and final technical recommendations were received are as follows:

GO Transit Board of Directors	April 8, 1988
Technical Advisory Committee	May 5, 1988
External Team	May 9, 1988
Hamilton Wentworth Transportation Services Committee	May 10, 1988
Halton Planning and Public Works Committee	May 11, 1988

Hamilton Transport and Environment Committee (public meeting)	May 16, 1988
Burlington Public Works Committee (represented by Burlington Staff)	May 16, 1988

Minutes of these meeting are included in Appendix B.

Three Public Information Centres were advertised and held as follows:

Central Public Library, Hamilton	3:00 to 9:00p.m.	May 31, 1988
Fairfield Public School, Burlington	4:00 to 9:00p.m.	June 1, 1988
Convention Centre, Hamilton	3:00 to 9·00p.m.	June 2, 1988

The displays used for the Information Centres are included in Appendix A, while attendance registers and all comment sheets received during the Centres comprise Appendix E.

PUBLIC AWARENESS

Public awareness of the study has grown throughout the past year, as two rounds of Information Centres were held, frequent reports in the media (newspapers, television, radio) have been published, the matter has appeared before municipal Committees and meetings have been held with Interest Groups.

Aided by a higher media profile during the third round of review in April and May (copies of newspaper and radio items are attached in Appendix C), publicity efforts on the part of the Project Team focussed on public awareness of the three Information Centres held in the community. An extensive effort was made through correspondence and distribution of brochures (see attached copy) as follows.

- brochures were distributed by mailman's walk to all postal addresses in the study area on May 20-25. The postal walks covered the same areas as those used in the first and second rounds of public involvement 1987. In Burlington, over 4,000 brochures were distributed in the areas between Plains Road and Highway 403 west of the Q.E.W., and between Prospect Street and the Q.E.W. in the east. Almost 32,000 brochures were mailed to addresses in Central Hamilton, bounded by Longwood Road, Hamilton Mountain, Brant Avenue, King Street, Wellington Street and Hamilton Harbour.

- All householders immediately adjacent to the recommended rail corridor between Gage Park in Hamilton and the Burlington GO Station were hand delivered a letter and brochure inviting them to attend the information Centres. (These homes were also included in the general mail distribution of brochures).

- All those who registered at any previous information Centre or who wrote letters to the Project Team were mailed a brochure and invitation to the Information Centres.

- Ontario Government Notices advising of the study and the Information Centres were placed in the Hamilton Spectator, Burlington Spectator, and Burlington Post on May 18 and 28 and in the Toronto Star, the Sun, and the Globe and Mail on May 25.

- External agencies, interested technical agencies, Harbour Stakeholders, Interest Groups and Provincial and Federal Members of Parliament were sent a letter with, if appropriate, a number of brochures for distribution.

- City and Regional Clerks and Hamilton Public Library were sent copies of the brochure for internal and public distribution.

- Display panels with brochures were set up in the Hamilton GO Train and Bus Terminals a week prior to the Information Centres and brochures were handed out in person to each passenger boarding the eastbound GO trains on May 25.

- Brochures were left at the ticket counters of the Burlington, Oakville West, Oakville, Clarkson and Port Credit GO Train Stations for the public.

The Centres consisted of a set of displays which interested people could review, and comment sheets which attendees were encouraged to fill out. Project Team representatives were available at all times to answer questions, discuss the displays, talk on a one-to-one basis about the project and listen to the public's suggestions and comments. The displays used at the Information Centres are appended to this report, as are the comment sheets submitted by attendees

SUMMARY OF COMMENTS

The comments made by elected representatives at the Committee presentations during the third round of review are included in the Minutes of meetings appended to this report. They may be summarized by noting a general support for the final technical recommendations along with a desire for speedy action and the addressing of specific concerns.

The Public Information Centres achieved their objectives as described in the Introduction, however attendance was limited to less than 300 over the three days (compared to 200 in round one and 400 in the second round). Most attendees spent up to an hour reviewing the material and discussing the study with the Project Team. The debate in the public's mind has apparently focussed around the fundamental choice of routes in Hamilton - CN vs CP. Arguments for one or the other, as reflected in the comment sheets and in discussion at the Information Centres, generally cite a common list of factors but different conclusions are drawn. Of the 91 comment sheets received, 52 stated a preference for the CP/TH&B route as opposed to 9 favouring CN.

Few people questioned the desirability of the service, and many expressed a strong desire to, whatever the recommendations, expand train service to Hamilton as soon as possible. There was general acceptance of the recommendation to increase service to meet demand, as the constraints and demands were detailed at the Centres. Although some concern about the limit on train service placed by the Hunter Street Tunnel was expressed, the "full service right now" position was not taken by very many attendees. This reflects the demand information and service recommendations provided, as well as the fact that the Tunnel is not a barrier to full train service when demand warrants.

The recommendations and feasibility plan shown for the intermodal transportation terminal at the CP/TH&B Station were subject of great interest and discussion, and were received favourably by a strong majority of the attendees. The possible parking deck was a significant factor in generating support for the plan, as skepticism continued to be expressed in some quarters about the likelihood of commuters driving to the Waterdown Road Station for parking, and the high parking demand currently in the CP/TH&B Station area was recognized. With the more detailed plans developed during the third stage of the study shown to the public, virtually all the questions lingering from the second round of Information Centres concerning the feasibility of the site for an intermodal terminal were answered to the satisfaction of the public.

The recommendation for provision of the Waterdown Road Station was supported almost unanimously, with suggestions for full service to the Waterdown Road Station, early implementation, and sufficient parking for all demand being common. Most Burlington attendees did not state a preference for a route in Hamilton, but attendees from Enfield Road desired the provision of a noise barrier as part of the project. The desire for a grade separation of King Road with the CN tracks in Burlington was also identified, although it was made clear that it was not included in the study recommendations.

Very little comment on natural environmental effects was made, and capital cost was mentioned rarely, and usually only in the context of comparing the CN with the CP route. As well, few attended on behalf of identified interest groups.

The desire to extend the GO Train System eastward towards Niagara was cited by some as an argument to retain the CN route in Hamilton, and James Street North business persons also argued for the potential for spurring economic development in the area through expanded use of the CN Station. On the other hand, a number of comments were made by frequent GO Train users that the service would be more convenient at the CP/TH&B Station, particularly with integrated Bus service.

Apart from Enfield Road Residents very little was heard from those who live elsewhere adjacent to the route and few current GO commuters made comments, in spite of the extensive efforts made to ensure their awareness of the Centres.

Following is a detailed breakdown of the comment sheets received during the three Information Centres. The relatively high response rate of 45% reflects the deep interest of most of those who made the effort to attend the Centres.

SUMMARY OF COMMENT SHEETS FROM THIRD ROUND OF PUBLIC INFORMATION CENTRES

HAMILTON (May 31, June 2, 1988)

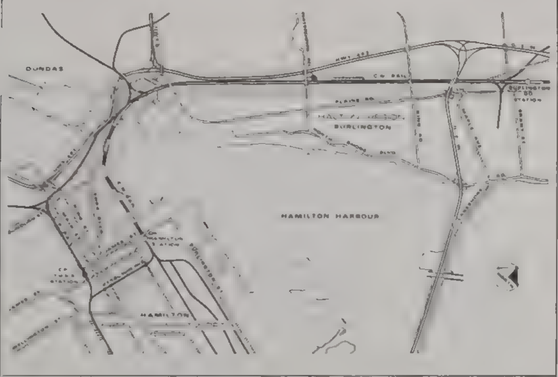
Registered attendees	159		
Total attendance	200+		
Comment sheets received	71		
prefer CP/TH&B route/support recommendations		50	[illegible]
prefer CN route		9	13%
no preference stated		13	[illegible]
Comments:			
proposed level of service inadequate		1	
parking at CP/TH&B a concern		8	
existing GO commuters preferring CN		1	
existing GO commuters preferring CP		5	
economic benefits to CP/TH&B area (cited by CP preferers)		3	
economic benefits to CN area (cited by CN preferers)		5	
HSR buses important factor at CP/TH&B		17	
extension to the east a concern		6	
Waterdown station noted		5	
implement as soon as possible		11	

BURLINGTON (June 1, 1988)

Registered attendees	43	
Total attendance	75+	
Comment sheets received	20	
Comments:		
noise at Aldershot yard a problem		4
King Road grade separation desired		1
Waterdown Road Station supported		6
prefer CP/TH&B route/support recommendations		9
prefer CN route		1
traffic concerns at Waterdown Road Station		2

APPENDIX A

PANELS DISPLAYED AT INFORMATION CENTRES



BURLINGTON TO HAMILTON
GO TRAIN SERVICE
EXPANSION PROGRAM

LEGEND
Study Area
Existing GO Rail Route
Recommended GO Rail Route
Other Rail Lines
Recommended GO Stations ●
Possible GO Train Storage Yards ▨

PUBLIC INFORMATION CENTRES

Information centres have been arranged as shown below. They will be staffed by Study Team representatives who will be able to discuss the project with you. Your input into the study recommendations is being sought and you are encouraged to attend one of the centres to express your views.

Tuesday, May 31, 1988
3:00 p.m. to 9:00 p.m.
Hamilton Central Library
55 York Boulevard (Jackson Square)
Hamilton

Wednesday, June 1, 1988
4:30 p.m. to 9:00 p.m.
Fairfield Public School
388 Plains Road West
Burlington

Thursday, June 2, 1988
3.00 p.m. to 9.00 p.m.
Webster Room, 3rd Floor
Hamilton Convention Centre
115 King Street West
Hamilton

For further information, please contact:

Mr. Brian Ogden,
Project Manager,
Toronto Area Co-ordinating Office,
Ministry of Transportation,
West Tower,
1201 Wilson Ave.,
Downsview, Ontario,
M3M 1J8 Tel.: (416) 235-3969

Mr. John Sutherns,
Consultant,
Project Manager,
McCormick Rankin,
60 Briarwood Ave.,
Mississauga, Ontario
L5G 3N6
Tel.: (416) 274-3477

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON

Brochure 3
RECOMMENDATIONS AND NOTICE OF INFORMATION CENTRES

JUNE 1988

Ministry of Transportation
THE REGIONAL MUNICIPALITY OF HALTON
GO TRANSIT
THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

BACKGROUND UPDATE

GO train service currently operates in the Lakeshore corridor between Oakville and Pickering, with 3 daily trains extending to the Hamilton CN Station. Expanded service is projected to be in place between Oakville and Burlington within five years. The current study is to investigate the feasibility of expanding GO Train service between Burlington and Hamilton.

The study began in early 1987, and the alternatives, analysis work, and preliminary recommendations have been reviewed during meetings and public information centres in June and November of 1987. Since November, final details have been worked out and the results are to be reviewed in a third round of meetings, presentations, and public information centres.

The purpose of this brochure is to inform you of the final technical recommendations and to invite all interested people to attend one of the public information centres to be held in early June in Hamilton and Burlington.

It should be noted that the study is being carried out in accordance with the requirements of the Environmental Assessment Act.

PLANNING STUDY ORGANIZATION

The study of the expansion of GO Train service between Burlington and Hamilton is a joint provincial/municipal undertaking, with participation by the Ontario Ministry of Transportation, GO Transit, the Regional Municipality of Hamilton-Wentworth and the Regional Municipality of Halton. A Project Team, comprising representatives of each organization, directs the study with input from local municipal staff, government agencies, technical organizations, concerned interest groups, local elected officials and interested individuals. The Project Team is assisted in carrying out the study by a group of professional consultants headed by McCormick Rankin, Consulting Engineers.

PUBLIC INVOLVEMENT

Public participation is an essential part of the planning process. The input of individuals and organizations during the two previous rounds of public review and throughout the study has been used in the development and analysis of alternatives, leading to the final recommendations. The Environmental Assessment Report to be prepared following completion of the study will document the public involvement and comments made during all three rounds of review, and will itself be available for public review and comment during the Environmental Assessment Review process.

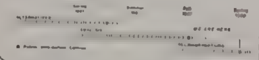
ALTERNATIVES

The purpose of the study is to determine the most feasible means of expanding GO Rail service between Burlington and Hamilton. The complete solution requires consideration of a complex set of inter-related alternatives. Areas in which basic alternatives have been analyzed include:

- Route (see Key Plan)
  - CNR corridor
  - CPR/TH&B corridor
- Train Service
  - frequency and schedules
- Station Location (see Key Plan)
  - downtown Hamilton Terminal: CN or CP/TH&B station
  - intermediate station: Waterdown Road, Kay Drage Park and/or Main Street
- Train Storage (see Key Plan)
  - rail yards in Hamilton, Burlington and Toronto (not shown).
- Staging
  - increase train frequency and/or extend service to an intermediate terminus.

Each basic alternative has, in turn, a variety of sub-alternatives to be considered.

STUDY SCHEDULE



FINAL TECHNICAL RECOMMENDATIONS

- The implementation of the recommendations will require approval under the Environmental Assessment Act. Construction will take place in the context of overall transportation requirements and the availability of funding at that time.

1. ROUTE

   Shift the existing GO Train service in Hamilton from the CN Rail Oakville Subdivision to the CP Rail Toronto Connection and Waterford Subdivision, terminating at the CP/TH&B Hunter Street Station.

2. LEVEL OF SERVICE

   - Provide incremental improvements in train service as appropriate and as required by demand up to the level of service that can be accommodated by the Hunter Street Tunnel (the existing tunnel can accommodate significant service upgrading without the need for reconstruction)
   - Integrate GO Bus and GO Train schedules to provide full GO service throughout the day in the Hamilton - Toronto corridor.

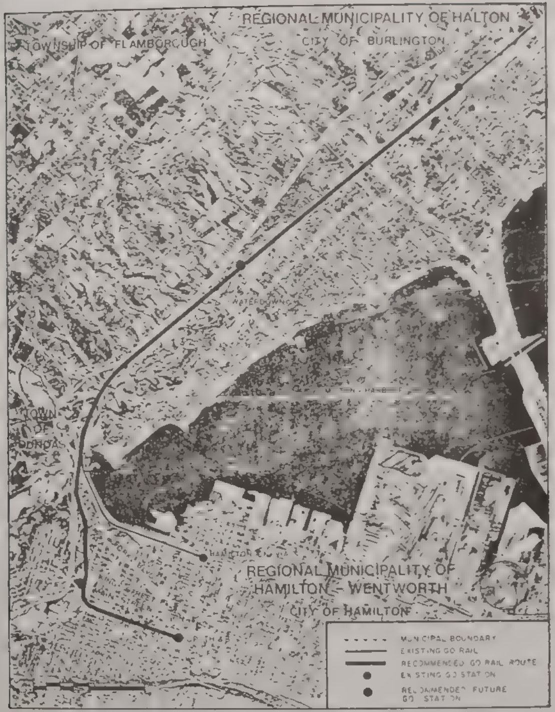
3. STATIONS

   CP/TH&B STATION

   Transfer the functions of the existing Hamilton Bus Terminal to the CP/TH&B Hunter Street Station, which would operate as an intermodal transit terminal.

   WATERDOWN ROAD STATION

   Provide GO Station facilities in the block bounded by Waterdown Road, Highway 403, CN Rail Aldershot Yard property and CN Rail Oakville Subdivision.



GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY KEY PLAN

INTRODUCTION AND BACKGROUND

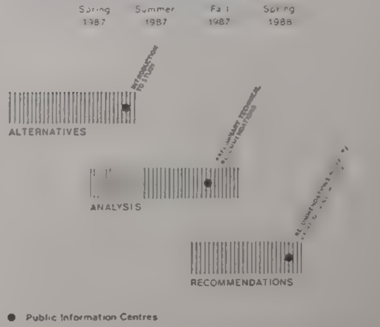
WELCOME TO THIS INFORMATION CENTRE. IT HAS BEEN ARRANGED SO THAT PEOPLE WHO ARE INTERESTED IN THE BURLINGTON TO HAMILTON SECTION OF THE GO TRAIN SERVICE EXPANSION PROGRAM CAN REVIEW THE RESULTS OF THE STUDY TO DATE AND DISCUSS THE PROJECT WITH REPRESENTATIVES OF THE STUDY TEAM

THREE GO TRAINS PRESENTLY RUN FROM THE HAMILTON CN STATION TO TORONTO IN THE MORNING AND BACK IN THE AFTERNOON. FULL GO TRAIN SERVICE PRESENTLY RUNS BETWEEN PICKERING AND OAKVILLE AND IS PLANNED TO BE IN PLACE BETWEEN OAKVILLE AND BURLINGTON BY THE EARLY 1990's.

THE CURRENT STUDY IS TO INVESTIGATE THE POSSIBLE EXPANSION OF GO TRAIN SERVICE BETWEEN BURLINGTON AND HAMILTON.

STUDY OBJECTIVES

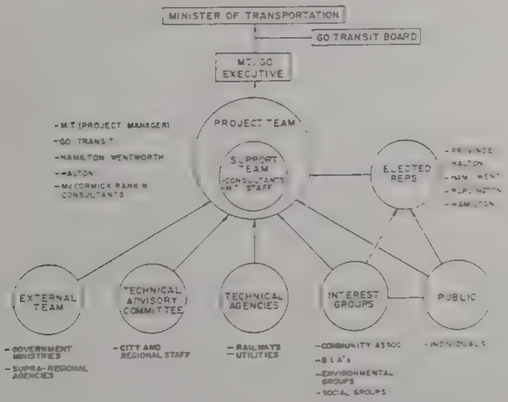
- TO DETERMINE LONG RANGE RECOMMENDATIONS FOR GO TRAIN SERVICE TO HAMILTON.
- TO PROVIDE FOR AN INTEGRATED LOCAL AND REGIONAL TRANSIT SYSTEM THROUGH THE DEVELOPMENT OF A SINGLE CENTRAL HAMILTON STATION.
- TO DEFINE STAGING PLANS THAT WOULD ALLOW FOR THE IMPLEMENTATION OF THE RECOMMENDATIONS.
- TO PROTECT A ROUTE AND PROPERTY FOR THE RECOMMENDATIONS.



THE CURRENT STUDY WILL BE COMPLETE WHEN AN ENVIRONMENTAL ASSESSMENT REPORT DETAILING THE ALTERNATIVES, ANALYSIS AND RECOMMENDATIONS IS SUBMITTED TO THE MINISTRY OF THE ENVIRONMENT. THIS IS SCHEDULED TO OCCUR IN LATE 1988 OR EARLY 1989. CONSTRUCTION OF ANY RECOMMENDED FACILITIES CANNOT OCCUR UNTIL FINAL APPROVAL OF THE REPORT BY THE MINISTRY OF THE ENVIRONMENT.

STUDY ORGANIZATION

THE STUDY IS FUNDED BY THE PROVINCE OF ONTARIO AND IS DIRECTED BY THE MINISTRY OF TRANSPORTATION AND GO TRANSIT THROUGH A PROJECT TEAM, WHICH INCLUDES REPRESENTATIVES FROM THE REGIONS OF HAMILTON-WENTWORTH AND HALTON. THE STUDY IS CARRIED OUT WITH INPUT FROM THE PUBLIC AND INTERESTED AGENCIES, AND A REPORT IS PREPARED WITH RECOMMENDATIONS FOR THE MINISTRY OF TRANSPORTATION. THE STUDY IS BEING CARRIED OUT IN ACCORDANCE WITH THE ENVIRONMENTAL ASSESSMENT ACT AND WITH COMPLETE AND OPEN PUBLIC INVOLVEMENT.



ANALYSIS FACTORS

- TRANSPORTATION SERVICE
  - RAIL
  - BUS
  - STAGING
- ECONOMIC EFFECTS
  - COMMERCIAL
  - RESIDENTIAL
  - TOURISM
  - ATTRACTION TO HAMILTON
- CONSTRUCTION COSTS
  - RAIL COSTS
  - STRUCTURE COSTS
  - TUNNEL COSTS
- SOCIAL EFFECTS
  - COMMUNITY INTRUSION
  - NOISE
  - CONSTRUCTION EFFECTS
- NATURAL ENVIRONMENTAL EFFECTS
  - SENSITIVE AREAS
  - VEGETATION
  - WATER

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

FINAL TECHNICAL RECOMMENDATIONS

- THE IMPLEMENTATION OF THE RECOMMENDATIONS WILL REQUIRE APPROVAL UNDER THE ENVIRONMENTAL ASSESSMENT ACT. CONSTRUCTION WILL TAKE PLACE IN THE CONTEXT OF OVERALL TRANSPORTATION REQUIREMENTS AND THE AVAILABILITY OF FUNDING AT THAT TIME.

1. ROUTE

- SHIFT THE EXISTING GO TRAIN SERVICE IN HAMILTON FROM THE CN RAIL OAKVILLE SUBDIVISION TO THE CP RAIL TORONTO CONNECTION AND WATERFORD SUBDIVISION, TERMINATING AT THE CP/TH&B HUNTER STREET STATION.

2. LEVEL OF SERVICE

- PROVIDE INCREMENTAL IMPROVEMENTS IN TRAIN SERVICE AS APPROPRIATE AND AS REQUIRED BY DEMAND UP TO THE LEVEL OF SERVICE THAT CAN BE ACCOMMODATED BY THE EXISTING HUNTER STREET TUNNEL. (THE EXISTING TUNNEL CAN ACCOMMODATE SIGNIFICANT SERVICE UPGRADING WITHOUT THE NEED FOR RECONSTRUCTION).
- INTEGRATE GO BUS AND GO TRAIN SCHEDULES TO PROVIDE FULL GO SERVICE THROUGHOUT THE DAY IN THE HAMILTON-TORONTO CORRIDOR.

3. STATIONS

CP/TH&B STATION

- TRANSFER THE FUNCTIONS OF THE EXISTING HAMILTON BUS TERMINAL TO THE CP/TH&B HUNTER STREET STATION, WHICH WOULD OPERATE AS AN INTERMODAL TRANSIT TERMINAL.

WATERDOWN ROAD STATION

- PROVIDE GO STATION FACILITIES IN THE BLOCK BOUNDED BY WATERDOWN ROAD, HIGHWAY 403, CN RAIL ALDERSHOT YARD PROPERTY AND CN RAIL OAKVILLE SUBDIVISION.

GO TRAIN SERVICE EXPANSION PROGRAM - ANALYSIS OF ALTERNATIVES
ECONOMIC EFFECTS

CRITERIA	CP/TH&B STATION		CN STATION	
	EXISTING	POTENTIAL	EXISTING	POTENTIAL
o Population within 750 m of station	12,890	14,120 *	6,900	6,600 *
o Employment within 750 m of station	21,860	26,750 *	7 330	10,070 *
o Residential unit development within 750 m of station	±7,540	±8,560	±2,960	±3 180
o Commercial development within 750 m of station (includes office and retail commercial)	207,200 m² *** (office only)	*555,600 m² **	Negligible	±55,700 m² **
o Tourist/Recreational attractions within 750 m of station	6 (Copps Coliseum, Art Gallery, Football Hall of Fame, Convention Centre Jackson Square, Hamilton Place)	8 (The 6 in existing + Theatre Aquarius and Eaton Centre)	0	1 (Waterfront Park)
o Compatibility of Terminal with Municipal Land Use/ Development policies	Not applicable Terminal unused	Compatible	Compatible since already in use	Less compatible since not in development area

* Population and Employment Figures Based on Year 2011 Ministry of Transportation Forecast

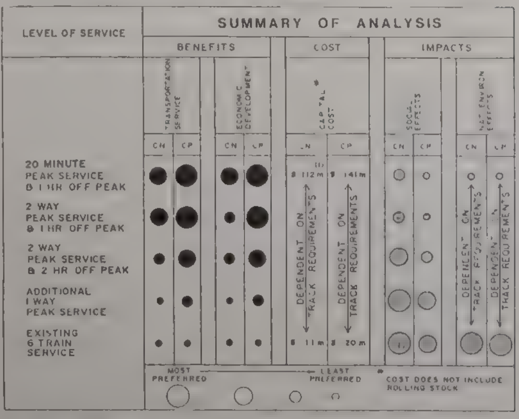
** Based on 65% of Maximum Permissable Floor Area Under Current Zoning. Source: City of Hamilton

*** Source Chambers & Co Ltd , Hamilton Office Space Inventory, July 1987

GO TRAIN SERVICE EXPANSION PROGRAM - EVALUATION OF ALTERNATIVES
ECONOMIC EFFECTS

CRITERIA	CP/TH&B FULL SERVICE	CP/TH&B PARTIAL 2 WAY	CP/TH&B IMPROVED 1 WAY	CN FULL SERVICE	CN PARTIAL 2 WAY	CN IMPROVED 1 WAY
o Likelihood of increasing/ reinforcing the number of people moving to Hamilton	●	•	–	●	•	–
o Likelihood of increasing/ reinforcing the draw to major tourism attractions	●	•		●	•	
o Likelihood of increasing/ reinforcing attractiveness of the core to businesses	●	•		●	•	
o Likelihood of stimulating/ reinforcing localized redevelopment and convenience order businesses	●	●	•	●	•	

LEGEND HIGH ● ● • · LOW NO EFFECT –



(1) THESE CN COSTS ARE BASED ON A PRELIMINARY ASSESSMENT THAT DOES NOT REFLECT A DETAILED SIMULATION OF OPERATIONS WITHIN THE CN YARD OR THE INTERACTION OF THE GO CN/PERIMETER ROAD AND WATERFRONT PARK PROPOSALS IT IS POSSIBLE THAT A FINAL ASSESSMENT WOULD RESULT IN SIGNIFICANTLY HIGHER COSTS

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

ENVIRONMENTAL ASSESSMENT PROCESS

THE STUDY IS FOLLOWING A FORMAL PROCESS IN ACCORDANCE WITH THE REQUIREMENTS OF THE ENVIRONMENTAL ASSESSMENT ACT OF ONTARIO. THE MINISTRY OF TRANSPORTATION IS THE PROPONENT OF THE PROJECT, AND WILL DOCUMENT THE FINDINGS OF THE STUDY IN AN ENVIRONMENTAL ASSESSMENT REPORT.

THIS REPORT WILL INCLUDE A DESCRIPTION OF THE PURPOSE AND THE RATIONALE FOR THE PROJECT AS WELL AS AN EVALUATION OF ALTERNATIVES, THE PUBLIC INVOLVEMENT IN THE STUDY, AND THE MINISTRY'S RECOMMENDATIONS FOR GO TRAIN SERVICE EXPANSION. THE MINISTRY OF TRANSPORTATION WILL SUBMIT THE REPORT TO THE MINISTER OF THE ENVIRONMENT FOR APPROVAL.

THE M.O.E. WILL THEN CIRCULATE THE REPORT AMONGST OTHER MINISTRIES AND AGENCIES FOR THEIR REVIEW. A GOVERNMENT REVIEW DOCUMENT (THE "BLUE REVIEW") WILL THEN BE PUBLISHED, AND NEWSPAPER ADVERTISEMENTS TAKEN OUT TO NOTIFY THE PUBLIC OF A PUBLIC REVIEW PERIOD. THE PUBLIC HAS 30 DAYS (MINIMUM) TO WRITE TO THE MINISTER OF THE ENVIRONMENT ABOUT THE ENVIRONMENTAL ASSESSMENT AND THE GOVERNMENT REVIEW AND TO ASK FOR A PUBLIC HEARING.

THE MINISTER OF THE ENVIRONMENT WILL THEN DECIDE TO EITHER ACCEPT THE E.A. DOCUMENT, APPROVE THE PROJECT (WITH OR WITHOUT CONDITIONS) OR REFER ONE OR BOTH DECISIONS TO THE ENVIRONMENTAL ASSESSMENT BOARD FOR A PUBLIC HEARING. IF A HEARING IS HELD, ADVANCE PUBLIC NOTICE IS GIVEN AND ANYONE MAY PARTICIPATE. THE DECISION OF THE E.A. BOARD FOLLOWING A HEARING BECOMES EFFECTIVE 28 DAYS AFTER THE DECISION IS ANNOUNCED UNLESS THE MINISTER OF ENVIRONMENT VARIES THE DECISION WITHIN THAT TIME.

IMPLEMENTATION OF THE PROJECT MUST AWAIT ENVIRONMENTAL ASSESSMENT APPROVAL.

FUTURE COURSE OF ACTION

- REVIEW PUBLIC COMMENTS
- SEEK ENDORSEMENT OF RECOMMENDATIONS BY MUNICIPAL COUNCILS
- PREPARE AND SUBMIT ENVIRONMENTAL ASSESSMENT REPORT (FALL 1988)

IMPLEMENTATION OF THE RECOMMENDATIONS WILL REQUIRE APPROVAL UNDER THE ENVIRONMENTAL ASSESSMENT ACT.

CONSTRUCTION WILL TAKE PLACE IN THE CONTEXT OF OVERALL TRANSPORTATION REQUIREMENTS AND THE AVAILABILITY OF FUNDING AT THAT TIME.

LIST OF GRAPHIC DISPLAY PANELS

In addition to the text panels reproduced in this appendix, the following map and photo panels were on display at each Information Centre but are unable to be reproduced in this report. An asterisk marks those panels which had previously been displayed during the second round of Information Centres in November 1987.

*	1:25000	Key Map
*	1:25000	Alternatives
*	1:10000	Photomosaic - Recommended Route (updated)
*	1:2000	Existing/Future Conditions in Study Area (updated) (4 panels)
		CP/TH&B Station Plan and Cross Section
*	1:2000	Hamilton Bus Routes
*		CN Station Development Concepts
*		CP/TH&B Station Development Concepts
*	1:2000	Waterdown Road Station alternatives
		GO Transit ridership/Transit services
	1:2000	Photomosaic - Possible Train Storage Site
*		Ministry of the Environment Environmental Assessment display (3 panels)

The followng panels were available for discussion purposes but were not on display throughout the Centres:

* Hunter Street Tunnel Plan/Profile (2 panels)
* Ferguson Avenue Loop Alternative Plan/Profile
* Station Alternatives (not recommended) - Kay Drage Park and King/Main
* Rejected Alternatives

APPENDIX B

MINUTES OF MEETINGS

MINUTES OF MEETING

GO TRAIN SERVICE EXPANSION PROGRAM
BURLINGTON TO HAMILTON STUDY

FILE. W.O. 1655-87

Time & Place:	2:00 p.m., Thursday, May 5, 1988 Room 247, Burlington City Hall

Attendees:	B. Ogden	Ministry of Transportation
	F. Goh	GO Transit
	D. McCleary	Planning Dept., Halton
	A. Georgieff	Planning & Development Dept., Hamilton-Wentworth
	J. Barr	Planning & Development Dept., Hamilton-Wentworth
	S. Renshaw	Economic Development Dept., Hamilton-Wentworth
	P. Baker	Hamilton Parking Authority
	M. Main	Director of Traffic Services, Hamilton
	J. Pavelka	Director of Public Works, Hamilton
	T. Dobbie	Public Works Dept., Burlington
	B. Young	Transit Manager, Burlington Transit
	J. Hall	Halton Conservation Authority
	J. Coates	Hamilton Conservation Authority
	V. Mauceri	Hamilton Street Railway
	J. Sutherns	McCormick Rankin
	S. Schijns	McCormick Rankin

Technical Advisory Committee

Purpose: To review the final technical recommendations. Copies of overhead slides presented at the meeting are attached.

Minutes

Mr. Sutherns described the study status, the work completed since the previous meeting of the Committee and the Final Technical Recommendations of the Project Team using overhead slides, copies of which are attached. It was noted that presentations will be made to Committees of Council in May and that three Public Information Centres will be held in late May and early June.

Questions focussed on the Waterdown Road Station, staging options and clarification of the study process. Mr. Sutherns noted that, although [illegible] options are indicative, staging recommendations will be tied to implementation strategies and will not be addressed in the Environmental Assessment Report. The GO Transit Board has directed the study team to examine the impact of the extension of full service to the Waterdown Road station, but as such a service expansion falls under GO Transit's Class E.A. exemption, it may not be treated as part of the current study.

Minutes of Meeting
May 5, 1988

Page 2

The concepts shown for the Waterdown Road Station include a revised access ramp from [illegible] Highway 403, a parking lot, station, pedestrian tunnel, platforms, and modifications to the Waterdown Road structure over [illegible].

Mr. Hall commented that the station plan developed for GO ALRT was acceptable to the Halton Conservation Authority, and that the proposed station, including drainage works, would be compared with it, particularly with a view to maintaining open channel flow in the drainage channel crossing the property.

Minutes prepared by

S. Schijns, P. Eng.
McCORMICK RANKIN

SS:dw
Encl.
cc T.A.C. members
Project Team members

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

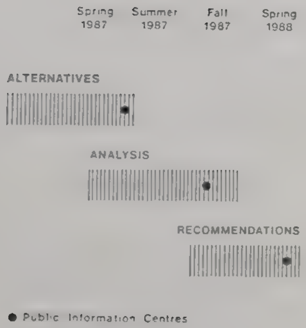
TECHNICAL ADVISORY COMMITTEE MEETING

[illegible] p.m. May 5, 1988
BURLINGTON CITY HALL

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

STUDY STAGES



GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

STUDY UPDATE

- Identification of alternatives
- Evaluation of alternatives
- November public review of preliminary technical recommendations
- Council and public support
- Subsequent work:
  - CP/CN Simulations
  - TH&B Investigations
  - Preliminary Design/Cost Estimate
- GO Board - April 8, 1988
- Municipal Councils - May 1988
- Public Review - June 1988
- E.A. Submission - Fall 1988

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

CP/CN SIMULATIONS

CP (Simulation of levels of service as constrained by existing Hunter Street tunnel)

- 6 - 7 revenue trains can be accommodated during each peak period.

  (eg. 3 peak direction plus 3 contraflow; 6 peak direction plus 1 contraflow; etc.)

- Off peak two way service can be accommodated with delays to CP schedule (approximately 2 - 4 hour service)

CN (No simulations carried out)

- In the absence of detailed simulations, the study team's best estimate is that the level of service as constrained by the existing Hunter Street tunnel can probably be accommodated with one additional track on the CN section of the line.

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

TH&B STATION

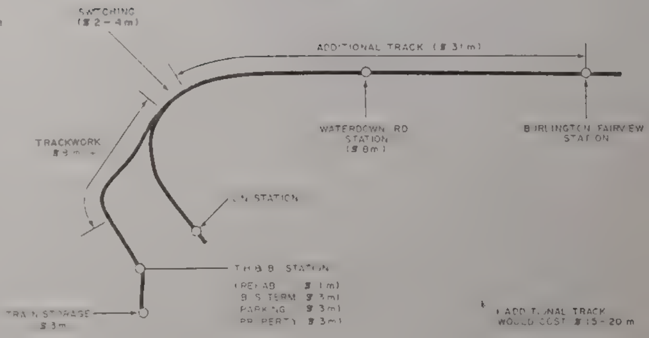
INTERMODAL REQUIREMENTS

- Inter-regional buses south of station (insufficient space to north)
- H.S.R. buses on James/John
- Taxis, kiss-n-ride, short term parking north of station
- Extremely limited staging options
- Deck for parking

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON

COST ESTIMATE



GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

FINAL TECHNICAL RECOMMENDATIONS

- The implementation of the recommendations will require approval under the Environmental Assessment Act. Construction will take place in the context of overall transportation requirements and the availability of funding at that time.

1 ROUTE

- Shift the existing GO Train service in Hamilton from the CN Rail Oakville Subdivision to the CP Rail Toronto Connection and Waterford Subdivision, terminating at the CP/TH&B Hunter Street Station.

2 LEVEL OF SERVICE

- Provide incremental improvements in train service as appropriate, up to the level of service that can be accommodated by the existing Hunter Street Tunnel.
- Maintain supplementary GO Bus service as appropriate.

3 STATIONS

CP/TH&B Station

- Transfer the functions of the existing Hamilton Bus Terminal to the CP/TH&B Hunter Street Station, which would operate as an intermodal transit terminal.

Waterdown Road Station

- Provide GO Station facilities in the block bounded by Waterdown Road, Highway 403, CN Rail Aldershot Yard property and CN Rail Oakville Subdivision.

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

SCHEDULE OF MEETINGS

Time	Date	Group	Location
9:30 a.m.	Thursday 5 May 1988	Conservation Authorities/R.B.G.	Royal Botanical Gardens/CNR
2:00 p.m.	Thursday 5 May 1988	Technical Advisory Committee	Room 247 Burlington City Hall
2:00 p.m.	Monday 9 May 1988	External Team	Room 305, Burlington City Hall
2:00 p.m.	Tuesday 10 May 1988	Hamilton-Wentworth Transportation Services Committee	Hamilton City Hall
9:30 a.m.	Wednesday 11 May 1988	Halton Planning & Public Works Committee	Halton Regional Offices
7:30 p.m.	Wednesday 11 May 1988	Halton Ecological & Environmental Advisory Committee	Halton Regional Offices
7:00 p.m.	Monday 10 May 1988	Hamilton Transport & Environment Committee/Public Meeting	Hamilton City Hall
7:30 p.m.	Monday 16 May 1988	Burlington Public Works Committee	Burlington City Hall
3:00 - 9:00 p.m.	Tuesday 31 May 1988	Public Information Centre	Central Library, Hamilton
4:30 - 9:00 p.m.	Wednesday 1 June 1988	Public Information Centre	Fairfield P.S., Burlington
3:00 - 9:00 p.m.	Thursday 2 June 1988	Public Information Centre	Convention Ctr., Hamilton

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MINUTES OF MEETING

GO TRAIN SERVICE EXPANSION PROGRAM
BURLINGTON TO HAMILTON STUDY

OUR FILE: W.O. 1655-87

Time & Place: 2:00 p.m., Monday, May 9, 1988
Room 305, Burlington City Hall

Attendees:

External Team Representatives

B. Ogden	Ministry of Transportation
F. Goh	GO Transit
W. Green	Ministry of the Environment EA Branch
P. Hollett	Ministry of the Environment Environmental Approvals and Land Use
C. Burke	Ministry of Municipal Affairs Parkway Belt
S. Muise	Ministry of Municipal Affairs
J. Huehn	Environment Canada
L. Brennan	Hamilton-Wentworth Dept. of Health Services
R. McLean	Halton Health Dept.
T. Lam	Ontario Hydro
L. Sumi	CN Rail
G. Pozzobon	CP Rail
D. Sherlock	VIA Rail
G. Gartshore	Ecoplans Ltd.
J. Sutherns	McCormick Rankin
S. Schijns	McCormick Rankin

Purpose: To review the Final Technical Recommendations of the Project Team.

Minutes

Mr. Sutherns reviewed the work carried out since the last meeting of the External Team, as summarized on overhead slides (copies of which are attached).

Mr. Sherlock enquired as to whether extra tracks would be required at the Waterdown Road Station, to which Mr. Sutherns responded that CN Rail was to study track needs in the corridor, and that the Study Team had been directed by the GO Transit Board to examine the impact of extending full service to the Station. Ms. Hollett raised the concern of diesel fumes near the CP/TH&B Station if it were used as a bus terminal. Mr. Sutherns noted that the adjacent properties are all commercial.

Regarding GO Train storage/layover areas, Mr. Sutherns responded to questions by Mr. Green and Ms. Hollett by stating that, to minimize train movement through the Hunter Street Tunnel, use of the existing Victoria Avenue or Kinnear yards would be recommended. Mr. Goh noted that train engines would be turned off overnight and no shunting of GO cars would be required, thereby minimizing the noise impact of GO activity.

Mr. Sutherns responded to Mr. Burke in stating that no construction was proposed for the north side of the Waterdown Road/Highway 403 interchange as part of the current project, thereby eliminating the possibility of affecting the Carolinean Forest there. Any interchange ramps on the south side of the interchange, however, would be designed so as not to preclude the ultimate development of the full interchange as part of a future unrelated project. In the vicinity of Desjardins Canal, the project will not affect any property west of Highway 403.

Mr. Sutherns noted Ms. Huehn's question concerning harbour fill, and stated that a definitive investigation of the topic would await CN Rail's study of track layout in the area.

It was noted that presentations to Committees of Councils would be done in May, and Public Information Centres were set for late May/early June. Preparation of the EA Report will follow, with a view to submission later in 1988. Mr. Sutherns also noted that this was anticipated to be the final meeting of the External Team for the project.

Minutes prepared by:

Stephen Schijns

S. Schijns, P. Eng.
McCORMICK RANKIN

SS dw
Encl.
cc: External Team
Project Team

Minutes of Meeting

GO Train Service Expansion Program

Burlington to Hamilton Study

Our File W.O. 1655-87

Time & Place: 2:00 p.m., Tuesday, May 10, 1988
Hamilton City Hall

Present: Hamilton-Wentworth Transportation Services Committee
Regional Staff
Media Representatives

B. Ogden	Ministry of Transportation
F. Goh	GO Transit
J. Sutherns	McCormick Rankin
S. Schijns	McCormick Rankin

Purpose: To advise the Committee of the final technical recommendations and of the material being taken to the public for review.

Notes.

Councillor Gallagher asked whether more GO Train service would result in more users. Mr. Sutherns stated that most new train riders would shift from GO Buses, with doubling of GO ridership in Hamilton projected by 2011. Councillor Ross suggested the increase would be more rapid, and that increased service was the best way to increase ridership.

In response to Councillor Ross' question, Mr. Sutherns stated that a switch of GO trains from CN to CP in Hamilton would have to await EA approval and funding, noting that 1990 was the earliest likely date for approval. Chairman Sears stated that the GO Transit Board of Directors was prepared to make the move immediately following approval.

Councillor Agostino reminded the Regional Council endorsement of the CP/TH&B route in 1986 included full service as a criteria and suggested that the high cost of the tunnel may preclude full service there. [illegible] Hinkley disagreed with the statement that demand did not justify increasing to full train service. Councillor Lariano urged construction of the parking deck at the CP/TH&B Station.

Chairman Sears expressed support for the recommendations and urged a united stand so that the project may be implemented as soon as possible.

Notes prepared by.

Stephen Schijns

S. Schijns, P. Eng.
McCORMICK RANKIN

SS:dw

Minutes of Meeting

GO Train Service Expansion Program

Burlington to Hamilton Study

Our File: W.O. 1655-87

[illegible] 9 30 a.m. [illegible]
Halton Region, [illegible]

[illegible]

[illegible]	GO Transit
[illegible]	GO Transit
[illegible]	Ministry of Transportation
J. [illegible]	McCormick Rankin
S. [illegible]	McCormick Rankin

[illegible] To advise the Committee of the final technical recommendations and of the material being taken to the public for review.

[illegible]

[illegible]

[illegible]

Minutes of Meeting
May 11, 1988

Page 2

Councillor Mulkewich asked about VIA and and GO train integration at Waterdown Road Station and Mr. Ducharme stated that VIA was no longer interested in the proposal, which dated from an earlier study. Councillor Mulewich also expressed his concern at the use of the CN corridor by both hazardous freight trains and additional GO trains. Mr. Sutherns also clarified for the Councillor some of the natural environmental effects of adding tracks in the Harbour/R.B.G. area.

Councillor Johnston stated that, since harbour fill was a potential impact, the Harbour Stakeholders should be met with. Mr. Sutherns pointed out that numerous contacts had been made with the group, the members were on the GO Study mailing list, and an offer to meet with Stakeholders was outstanding.

Notes prepared by:

S. Schijns, P. Eng.
McCORMICK RANKIN

SS.dw

cc: B.Ogden

Minutes of Meeting

GO Train Service Expansion Program

Burlington to Hamilton Study

Our File: W.O. 1655-87

Time & Place: 7:45 p.m., Wednesday, May 11, 1988
Halton Region offices

Present: Halton Ecological Advisory Committee

D. McCleary	Halton Planning Dept.
B. Ogden	Ministry of Transportation
J. Sutherns	McCormick Rankin
S. Schijns	McCormick Rankin

Purpose: To advise the committee of the final technical recommendations and of the information to be taken to the public for review.

Notes

Mr. Sutherns made a brief presentation describing the study status, recommendations and review process. Mr. McCleary noted that the study team would return to EEAC for their comment at the time of the submission of the Environmental Assessment Report. Mr. Johnston of the Committee stated that he would, as a member of the Harbour Stakeholders group, arrange for a presentation to that group. Mr. Sutherns noted that the Stakeholders had been contacted numerous times, both individually and as a group, but had never initiated a meeting.

[redacted] provision of station access to and from the west would not be part of the undertaking for this EA.

A subcommittee was formed to review the EA submission, along with the Environmental Status Statement for the Oakville to Burlington GO expansion.

Notes prepared by:

Stephen Schijns

S. Schijns, P. Eng.
McCORMICK RANKIN

SS:dw

McCORMICK RANKIN
CONSULTING ENGINEERS

Memo to File

GO Train Service Expansion Program

Burlington to Hamilton Study

W.O. 1655-87

Re: Burlington Public Works Committee meeting

7:00 p.m. on Monday, May 16, 1988 at Burlington City Hall

Due to simultaneous commitment to a Hamilton Committee meeting, members of the Project Team were unable to attend the Burlington meeting.

B. Ogden, J. Sutherns and S. Schijns of the Study Team met with T. Dobbie of Burlington Public Works department at 3:00 p.m. on May 16 and briefed Mr. Dobbie on the project status. Mr. Dobbie then represented the Project Team at the Public Works Committee.

Mr. Dobbie reported that concerns of the Committee were mainly with noise impact in the Aldershot Yard area and the desire to grade separate King Road with the CN Rail Corridor.

Notes prepared by:

Stephen Schijns

S. Schijns, P. Eng.
McCORMICK RANKIN

SS dw

cc B Ogden

McCORMICK RANKIN
CONSULTING ENGINEERS

Memo to File

W.O. 1655-87

GO Train Service Expansion Program
Burlington to Hamilton Study

Re: Hamilton Transport and Environment Committee Public Meeting
7.00 p.m. Monday, May 16, 1988 at Hamilton City Hall

Present:
Committee Members
City Staff
Media Representatives

B. Ogden	Ministry of Transportation
F. Goh	GO Transit
J. Sutherns	McCormick Rankin
S. Schijns	McCormick Rankin

Notes

The public meeting was held by the Transport and Environment Committee and advertised in the Hamilton Spectator. The Project Team was invited to provide a brief presentation. The meeting was held following discussion of the project at Hamilton Planning and Development Committee and prior to Council review, so that public comment could be incorporated into Council's consideration of the Study. Before the Committee were recommendations from the Central Area Plan Implementation Committee concerning the project, including a principal recommendation that the terminus for GO Rail be relocated to the CP/TH&B Station as soon as possible. The CAPIC recommendations had been tabled by the Planning and Development Committee pending the holding of the public meeting.

The meeting was attended by approximately 50 people, of which 18 spoke to Committee on the project after Mr. Sutherns outlined the study status and recommendations. Most speakers identified themselves as North End residents, James Street North business persons, or current train commuters and nearly all spoke in favour of retaining GO train service on the CN route. Reasons for preferring CN were cited as parking, bus access, development potential, benefits to James Street North businesses, existing commuter patterns, extension to Stoney Creek/Niagara, downtown overdevelopment, and attractiveness of the proposed Waterfront Park.

Following the speakers and discussion, Committee did not take a position on the CAPIC recommendations and they were referred back to the Planning and Development Committee, to be forwarded to Council with no comment from the Transport and Environment Committee.

Notes prepared by:

S. Schijns, P. Eng
McCORMICK RANKIN

SS:dw
cc: B.Ogden

APPENDIX C

MEDIA REPORTS

3250
880411 TORONTO CBL 07:30 NEWS

[illegible] HAMILTON - GO TRAIN SERVICE NO GO

ANNOUNCER: PEOPLE IN HAMILTON CAN FORGET ALL ABOUT GETTING A FREQUENTLY RUNNING GO TRAIN SERVICE SIMILAR TO THE ONE BETWEEN OAKVILLE AND TORONTO. THAT'S THE [illegible] FROM [illegible] GO TRANSIT AND THE MINISTRY OF TRANSPORTATION. [illegible] HAS THE STORY.

[illegible] 5[illegible] GO TRAINS RUN BETWEEN OAKVILLE AND TORONTO EVERY WEEK DAY. IN CONTRAST ONLY SIX RUN BETWEEN HAMILTON AND TORONTO. NOW THE GO TRANSIT BOARD HAS ACCEPTED A STUDY TEAM'S RECOMMENDATION CUTTING AN ORIGINALLY PROPOSED [illegible] OF GO RAIL EXPANSION TO HAMILTON TO JUST [illegible] DOLLARS. AND THAT HAS ENDED ANY HOPE OF HAMILTON [illegible] GO TRAIN SERVICE. GO-TRANSIT CHAIRMAN LOU PARSONS.

LOU PARSONS: BUT THE RIDERSHIP DEMANDS DON'T APPEAR TO BE THERE FOR MORE TRAINS THAN HAS BEEN TALKED ABOUT IN THE STUDY. THE SIX OR SEVEN TRAINS WHICH [illegible] THE HAMILTON FOLK, I THINK [illegible] THERE AREN'T THE PEOPLE MOVING FROM HAMILTON TO TORONTO EVERY [illegible]

REQUIRE HOURLY AND 2[illegible] MINUTE SERVICE

[illegible] ACCORDING TO GO-TRANSIT AN AVERAGE OF 340 [illegible] TRAVEL FROM HAMILTON TO TORONTO EVERY MORNING [illegible] OF THEM HAVE SIGNED A PETITION TO KEEP THE RAIL TRANSIT TERMINAL AT THE C.N. STATION IN THE NORTH END OF HAMILTON. GO TRANSIT AND THE STUDY TEAM WANT TO [illegible] THE [illegible] T H & B. STATION. THE FINAL DECISION WILL BE MADE BY THE PROVINCIAL GOVERNMENT. PAUL [illegible] CBC NEWS, HAMILTON.

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Waterdown Road GO station encouraged

Spectator
22-2-88

A NEW GO Station for western Burlington must become an immediate priority for the province, which is expanding the GO system through Halton and Hamilton, says a regional report.

Halton politicians will consider a resolution Wednesday asking the transportation ministry for early development of a Waterdown Road station.

The province has tentatively scheduled the station for 1991, but there seems to be little action at this point to get the project underway, said Rash Mohammed, Halton's planning commissioner. The final timing of the development has not yet been determined.

"Give us that one (Waterdown Road) and we'll have completed a network of stations to serve Halton," said Mr Mohammed, who will present his report to the region's planning and public works committee. "We know we need a site on Waterdown Road, give us early development of it."

The province and the Toronto Area Transit Operating Authority are preparing plans to implement full Go service through Halton and Hamilton, but much of the effort has concentrated on studying a station site for Hamilton, states the report.

Halton does not have to wait for a Hamilton site to be determined before decisions are made about Waterdown, said Mr Mohammed.

It's particularly important to open a new station for western Burlington because of the congestion and lack of parking at the major station on Fairview Street.

"To relieve that we need the Waterdown Road station," said Mr Mohammed.

The province is also building a station at Appleby line, but that facility will quickly reach capacity because of urban growth in the Headon and Rose communities. That puts even more emphasis on having a third station, located on Waterdown Road, said Mr Mohammed.

The number of commuters boarding trains in Burlington will continue to rise, he added, because of residential developments in Dundas, Ancaster and Waterdown. Commuters from those communities might find it more convenient to drive to Burlington for the trains.

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L8N 3G3, by Southam Inc., proprietor

Timely advice

GO to Waterdown

The GO train business has been just too successful at Burlington's overworked Fairview Street station. It's time to spread the trade westward. Halton planning commissioner Rash Mohammed advises early action on the planned Waterdown Road-Highway 403 GO station and that's smart thinking.

The Halton and Hamilton-Wentworth regions should throw their support behind the rapid construction of a Waterdown Road station, not just to take the pressure off Fairview Street and its patrons but to supply a new and easy access to the GO line for thousands of people in both regions.

For GO commuters in Aldershot and west Burlington, a Waterdown Road access would bring immediate relief from the strains of driving through rush hour traffic in the central city, especially ever-busy Fairview between Brant Street and the Guelph Line, where the present GO station is located.

For people in the western half of Hamilton, above and below the Mountain, as well as commuters living in Waterdown, Ancaster, Dundas and Flamborough, a Waterdown Road GO station would be quick and easy to reach from Highway 403.

As Mr. Mohammed notes, construction of a Waterdown Road station could proceed, regardless of plans for a downtown Hamilton GO station. Ontario had tentatively planned to open the new west Burlington station in 1991 but heavy development in Halton and Hamilton-Wentworth during the last two years warrants earlier action.

Hamilton-Wentworth has good cause to support Halton in asking Ontario to move quickly on a Waterdown Road station. It's the best prospect for delivering more GO service to people in Hamilton-Wentworth in the immediate future — long before GO trains can be hauling into the Hunter Street TH & B station, the downtown site recommended by provincial planners.

A Waterdown Road station easily accessible to most of Hamilton-Wentworth would bring the region benefits of expanded commuter service long before the new Hamilton downtown connection is made

The whole western part of the city and Wentworth would become more attractive for housing and business development, particularly to families and businessmen flushed out of Metropolitan Toronto by that area's real estate prices and its high cost of living and doing business.

The Halton council has nothing to lose and everything to gain by taking Mr. Mohammed's timely and constructive advice. The same goes for the Hamilton-Wentworth council. Although the Waterdown Road site is in Halton, a GO station would serve Hamilton-Wentworth as much as Halton, if not more.

THE GLOBE AND MAIL

Open debate urged on GO extension

Hamiltonians concerned about choice of terminus

BY KEVIN MARRON
Special to The Globe and Mail

26.12.87

HAMILTON

While planners are pressing ahead with a scheme to reroute commuter rail services into downtown Hamilton, citizens' groups are warning that the project could be derailed by a lack of public participation.

During the past 10 years, two attempts to bring rapid rail transit to Hamilton failed as a result of massive opposition from community groups, which maintained they were consulted too little and too late by the Ontario Government teams that recommended routes for the rail lines.

An agency that monitored citizen involvement in the two previous studies is now warning municipal politicians that the same mistakes are being made in a current study of alternative routes for an extended GO train service.

Urmas Soomet, president of the Social Planning and Research Council says his organization's warning has been unanswered and apparently unheeded.

"Hamilton needs and wants the service, but we are concerned that an attempt to be expeditious may end up being a long way around," Mr. Soomet said in an interview.

In addition to the practical questions of convenience and cost, the decision about where to locate a commuter rail terminus involves the future shape of downtown Hamilton. Also at stake are two of the city's largest architectural landmarks.

Critics of the study, which is being undertaken by engineering consultants and by staff of the Ontario Ministry of Transportation and Communications, say there has been no public debate on the broader issues.

The study team has been soliciting public opinion through open-house information sessions and meetings with individual groups, but critics say this method of consultation serves to minimize debate and fails to provide the basis for making an informed decision.

Consultants involved in the study say that about 80 of 100 people who answered questionnaires at open houses last month supported a preliminary recommendation to reroute GO services from the CN station in the north end of the city to the disused downtown station of the Toronto, Hamilton and Buffalo Railway.

Municipal politicians have unanimously endorsed this concept.

Both the CN station, which now serves as the terminus for a limited rush-hour GO service, and the TH&B station are considered significant heritage buildings. But David Cuming, president of the local branch of the Architectural Conservancy of Ontario, says not enough consideration has been given to the effects of the plan on architectural landmarks.

Both stations were built in the early 1930s, but they are dramatically different. While the CN station is a massive classical building, similar in style to Toronto's Union Station, the TH&B station was designed in the period's innovative, functional "international style."

The TH&B station has fallen into disrepair since it ceased to be used as a passenger terminal in 1981, and there is little prospect for its preservation if it is not used for the GO service. While architectural conservationists fear for the future of the CN station if the GO service is moved, a spokesman for CN said it will continue to be used for VIA rail service in any event.

Commuters who use the rush-hour GO service favor the CN station, and have complained that they were not adequately consulted about the proposed change.

Planners maintain that the TH&B terminus would be more convenient and would stimulate downtown development.

That route would be significantly more expensive, because an expanded service would require the widening of a tunnel that brings trains into the centre of the city. A previous study, in which planners favored a different route, assessed the cost of widening the tunnel to be too high, and raised concern about the impact on surrounding buildings.

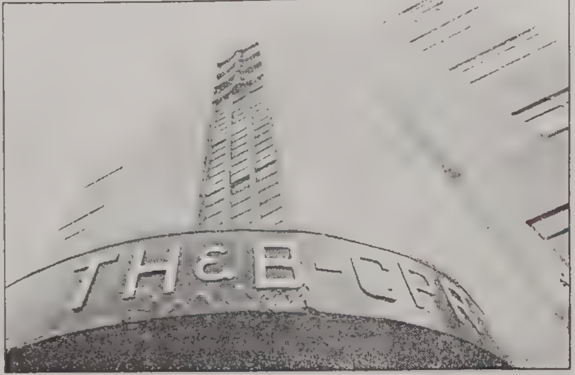
But Brian Ogden, who heads the present study team, says it is now believed that the additional construction costs may be less than $40-million, and that there will be no harmful effects on nearby buildings.

David Cohen, a member of a citizens' advisory committee on downtown planning, says there is "a sizeable public expense involved here, and the decision is important in terms of how the city develops in future. But I don't think that when the decision is made it will be one that a lot of people know much about."

The CN station is about a mile north of Hamilton's most concentrated business and shopping area, and city planning committee chairman William McCulloch says it is unreasonable to expect people to travel "a mile of no man's land to get to the station."

But others argue that this could be used to encourage development to spread across a wider area of central Hamilton. They say it would enhance plans for recreational development of the waterfront in the north end and thus help the city implement its own long-range plans for the central area.

Gillian Simmons, a north-end neighborhood representative who is also a member of the city's Central Area Plan Implementation Committee, says she has yet to see any economic forecasts or long-range planning and transportation studies that are being considered in the study. "The general public has not been sufficiently informed about all the ramifications of this proposed shift."



JEFF WASSERMAN/The Globe and Mail

Consultants recommend the Hamilton, Toronto and Buffalo Railway station.

13 4.88

•• THE SPECTATOR, W

Remarks by GO boss bother Mayor Morrow

MAYOR BOB Morrow is perturbed by what he calls negative comments about the proposed extension of service to Hamilton made to the media by Go Transit chairman Lou Parsons.

Mr. Parsons' comments after a Friday meeting on the issue suggested Hamilton had settled for less-than-full GO service, Mr. Morrow told the economic development and planning committee yesterday.

"It seemed to be downscaling the potential number of trains and amount of service," Mr. Morrow said later.

Committee chairman Don Ross agreed.

"It came across as very negative last night. The mayor's right," he said.

Regional Chairman Bill Sears, who hadn't heard Mr. Parsons' broadcast comments, said the Go Transit board did not suggest anything more than what had been endorsed by regional council.

"I actually felt it was a positive meeting. I'm sure when we left the meeting Lou Parsons felt the same way," said Mr. Sears.

The Go Transit board of directors endorsed the old TH&B railway station on Hunter Street East as the preferred location for a downtown Hamilton terminal.

The proposal does not call for an expansion of the Hunter Street West railway tunnel but suggests service be started with six or seven trains a day with expanded service in the 1990s.

Mr. Morrow has said he wants full service started immediately.

Mr. Parsons could be not be contacted yesterday

Station choice 'shortsighted'

STONEY CREEK — Go Transit is going to the wrong place in council's opinion.

The Go Transit board's selection of the former TH&B station for its downtown Hamilton terminus was called short-sighted last night. It makes eventual extension of the commuter rail service to Stoney Creek and beyond much more difficult, said Mayor Stan Napper.

His suggestion that council ask the board to reconsider — although the transit board is in line with regional council's preference — was enthusiastically received by Stoney Creek council.

"We're going to ask them to reconsider, notwithstanding that we are members of the Hamilton-Wentworth region. But we're the only municipality that stands to benefit from the extension or from the use of the CN station."

The CN station on James Street North was the board's other option.

The problem with the TH&B site, says Mayor Napper, is that to get the trains to Stoney Creek, they would have to go along the Gage Avenue line, to the CN line, which would mean frequent disruptions of traffic.

Lou Parsons, head of the Go Transit board, said TH&B was the choice because it was the station that would generate the most traffic.

The choice of TH&B is another example of Hamilton taking care of itself, said Councillor Albert Marrone.

"This is a very critical issue. If we're going to develop to the numbers that I think we are going to, then the transportation corridor has to basically come on the northern section of Hamilton. It's tunnel vision by Hamilton. It's shortsighted."

Public meeting ordered to explore GO services

19.4.88

A PUBLIC meeting will be held to discuss recent recommendations for expansion of GO Transit services to Hamilton although some city politicians say there's been enough public input.

The transport and environment committee voted yesterday to hold a meeting to discuss recommendations from the Central Area Plan Implementation Committee whic identifies the former TH&B station as the preferred location for the a downtown terminal.

It also recommends that reconstruction of the Hunter Street tunnel be deferred until growth in service warrants it be examined further

Earlier this month the Go Transit board also recommended the Hunter Street East station as the preferred location.

The committee and GO Transit board's choices of the TH&B station puts it in line with Hamilton-Wentworth council, which also prefers the station owned by CP Rail over the CNR station on James Street North.

Alderman Henry Merling told the committee a public meeting must be held before it reports to city council on recommendations from the committee.

But Alderman Paul Cowell questioned what more the public can say "Let's get on with the job. I think everyone's come to the conclusion ... it should be the TH&B station."

Alderman Tom Murray added, "I see nothing wrong with public meetings but we've had so many public meetings over the years."

Only Alderman Dominic Agostino said he favors further discussion on the matter.

CITY OF HAMILTON
NOTICE TO CITIZENS

NOTICE OF PUBLIC MEETING

SUBJECT. GO RAIL STUDY
DATE: 1988 MAY 16
TIME: 7 00 O CLOCK P M
PLACE: CITY HALL.
2ND FLOOR LOBBY

A public meeting will be held by the Transport and Environment Committee of the City of Hamilton, to receive comments concerning recommendations submitted by the Central Area Plan Implementation Committee (CAPIC) respecting the GO RAIL STUDY

For further information contact the Secretary of the Transport and Environment Committee at 526-2747

E A Simpson
City Clerk

City Hall
Hamilton, Ontario
April 30 1988

SPECTATOR APRIL 30/88
PAGE 65

GO board likes TH&B station

9 4 88

THE GO Transit board of directors has endorsed the former TH&B railway station as the preferred location for a downtown Hamilton terminal.

The decision puts the board in line with Hamilton-Wentworth council, which prefers the Hunter Street East station, now owned by CP Rail, to the CNR station on James Street North, the other option.

"It was determined the TH&B station was in the area that would get the most traffic and serve the greatest number of people, in that it is downtown and in an area accessable to the Mountain," said Lou Parsons, head of the Go Transit board.

The option endorsed by the board yesterday after a presentation by Ministry of Transportation consultants McCormick Rankin, does not include an expansion of the Hunter Street West railway tunnel.

Mr Parsons said CP has determined it [illegible] get six or seven trains in each direction through the tunnel daily without disrupting its freight service. The board expects that will be enough to serve expected rush hour traffic from Hamilton when service is expanded in the 1990s.

The cost of the option is $62 million, far less than the estimated $140 million cost if the tunnel was to be expanded.

Ancaster Mayor Bob Wade, head of the region's transportation services committee, said the board's recommendation — which goes to the ministry — is a significant boost to the region's position.

10.4.88

New $64 million Hamilton service approved by GO

A $64 million plan to expand train service to Hamilton has been approved by GO Transit.

But at a board of directors meeting, Chairman Lou Parsons said the "last spike" could still be several years away, although he hopes the service will start in 1990.

"We have been at this since 1974, and this is the first time you can take something and hold it in your hand," Parsons said Friday. "We still have a ways to go."

The plan will have to be approved under the Environmental Assessment Act and the process could take one or two years, Parsons said. Ontario Treasurer Robert Nixon has yet to commit any money to the project, he added.

Under the consultant's plan presented to the board yesterday, the number of trains running between Burlington and Hamilton would more than double.

To accommodate the increased traffic, an additional track will have to be built between Burlington's Fairview Station and the track leading to Hamilton's Hunter St. train station.

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880418 AC
TORONTO CBL 06H30 NEWS

SUBJECT: HAMILTON AND STONEY CREEK GO STATION

ANNOUNCER: THE BATTLE OVER THE CHOICE OF A PERMANENT HAMILTON GO TRIAN STATION IS SPLITTING TWO AREA MUNICIPALITIES. SO FAR MOST MEMBERS OF HAMILTON CITY COUNCIL FAVOUR SWITCHING THE GO TRAIN SERVICE FROM THE CN STATION IN THE CITY'S NORTH END TO THE DOWNTOWN T.H.AND B STATION. BUT NEXT WEEK THE STONEY CREEK CITY COUNCIL IS EXPECTED TO VOTE [illegible] IN FAVOUR OF KEEPING THE COMMUTER TRAINS RUNNING INTO THE CN STATION. PAUL KIDD REPORTS.

KIDD: MAYOR STAN KNAPPERS SAYS STONEY CREEK COUNCILLORS ARE AGAINST ANY MOVE TO MAKE THE T. H. AND B STATION IN DOWNTOWN HAMILTON THE GO TRAIN TERMINUS.

KNAPPERS: I THINK THE T.H.AND B STATION AS A TERMINAL IS RIDICULOUS BECAUSE IT DOESN'T PROVIDE FOR EXTENDING THE SERVICE DOWN THE PENNINSULA WHICH HAS TO COME ABOUT IN THE NOT TOO DISTANT FUTURE. AND IF YOU CAN IMAGINE TRAINS CUTTING DOWN THE GAGE AVENUE TRACK FROM THE T.H AND B RAILWAY TO THE CNR TRACKS. CAN YOU IMAGINE THE DISRUPTION TO THE RUSH HOUR TRAFFIC IN THE CITY OF HAMILTON? IT JUST DOESN'T MAKE SENSE THAT EVERYTHING SHOULD BE CONCENTRATED IN THE CENTRE OF HAMILTON.

KIDD: KNAPPERS SAYS THE CN STATION IS THE ONLY LOGICAL CHOICE FOR EVENTUAL EXTENDING GO TRAIN SERVICE TO STONEY CREEK AND DOWN THE NIAGARA PENNINSULA. HE POINTS OUT THAT SINCE THE HAMILTON/WENTWORTH REGION WAS CREATED 14 YEARS AGO, HAMILTON'S POPULATION HAS REMAINED VIRTUALLY UNCHANGED WHILE STONEY CREEK'S HAS ALMOST DOUBLED. KNAPPERS SAYS THE CITY HAS ALREADY SET ASIDE AN AREA FOR A GO TRAIN STATION TO SERVE THE ESTIMATED 60 TO 90 THOUSAND PEOPLE WHO LIVE IN STONEY CREEK AT THE END OF THE CENTURY. PAUL KIDD CBC NEWS, HAMILTON.

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TEXTE 34 201200

3250
880517 AC
TORONTO CBL 07H30 NEWS

Brian

SUBJECT: GO SERVICE FROM HAMILTON CN STATION

ANNOUNCER: COMMUNTERS IN HAMILTON MADE IT CLEAR LAST NIGHT THAT THEY WANT THEIR GO TRAIN TERMINAL TO STAY WHERE IT IS. AT THE CN STATION. THE COMMUTERS PACKED THE PUBLIC MEETING WITH THE CITY'S TRANSPORT AND ENVIRONMENT COMMITTEE WITHELD ENDORSING THE PLANNER'S CHOICE OF MOVING THE TERMINAL TO THE T.H. AND B. STATION. PAUL KIDD REPORTS.

KIDD: SPEAKER AFTER SPEAKER GAVE NUMEROUS REASONS WHY THE GO TRAIN STATION SHOULDN'T BE SWITCHED FROM THE NORTH END CN STATION TO THE DOWNTOWN T.H.AND B. STATION. COMMUTER CAROLE BARBIE IS ONE OF THOSE WHO OPPOSES CHANGING THE TERMINAL.

BARBIE: I THINK THAT THE MAJORITY OF PEOPLE PARTICULARLY COMMUTERS WANT THE CN STATION BECAUSE ITS GOT BETTER ACCESS. ITS MORE EXPANDABLE. ITS A LARGE STATION IT CAN HANDLE A LOT MORE PEOPLE.

KIDD: BARBIE WAS SUPPORTED BY THE LEADER OF A CONSUMER ADVOCACY GROUP. JOHN MC CALLUM IS THE PRESIDENT OF TRANSPORT 2000 ONTARIO.

MC CALLUM: THERE'S GOT TO BE THE CN STATION. THAT'S WHERE THE OPPORTUNITY IS. THAT'S WHERE THE VAST POTENTIAL FOR INTERMODAL OPERATION IS. THAT'S WHERE THE SURROUNDING REAL ESTATE DEVELOPMENT IS POSSIBLE. THAT'S THE PLACE THE CITIZENS OF BUFFALO OF NIAGARA FALLS OR ST CATHERINES ARE GOING TO COME TO. THEY CAN'T COME TO THE T.H. AND B. STATION.

KIDD: HAMILTON COMMUTERS VOW THEY'LL FIGHT THE PROPOSED GO TRAIN STATION CHANGE BY GO PLANNERS AND SOME POLITICIANS ALL THE WAY TO AN ENVIRONMENTAL ASSESSMENT HEARING. PAUL KIDD CBC NEWS, HAMILTON.

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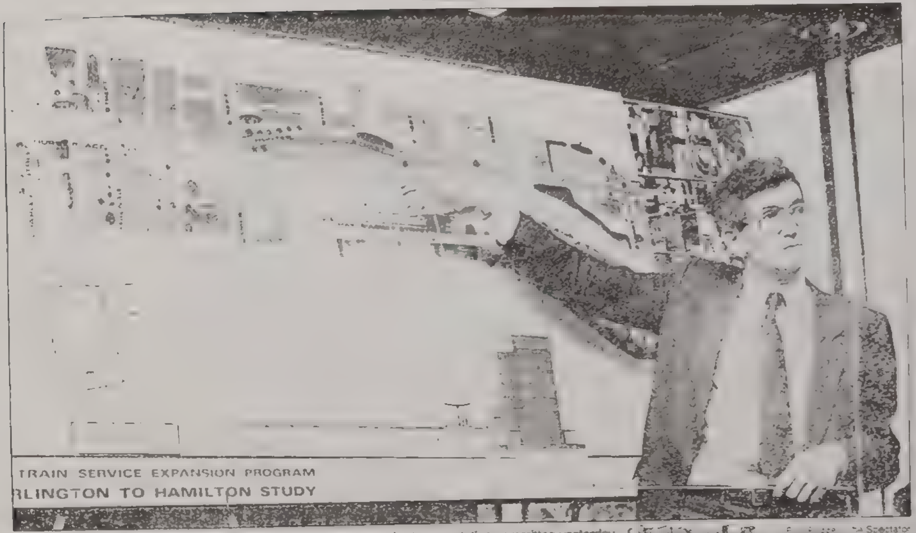


Consultant John Suthems gives a briefing on future GO plans to the transportation committee yesterday. SPECTATOR 11-5-88 The Spectator

Let's get together on GO issue, says Sears

HAMILTON-WENTWORTH Chairman Bill Sears says city and regional councillors must stand together or risk falling off the tracks when it comes to expanding GO Transit train service between Hamilton and Toronto

"This is not the time for divisive vibes. We've got to go for it, and go for it in a positive fashion," Mr. Sears told the region's tranportation services committee yesterday after a presentation by an engineering consultant and Ministry of Transportation staff

A number of committee members voiced dissatisfaction at the scope of the proposed passenger service and the preferred site for GO's downtown terminus, the former TH&B rail station on Hunter Street East.

'This isn't time for divisive vibes,' says regional boss

Choosing the TH&B site, owned by CP Rail, would mean diverting GO trains from CN tracks near Cootes Paradise to the CP line, said engineering consultant John Suthems of Mississauga.

He said the Hunter Street tunnel, which runs from the rear of city hall to Queen Street on a single track, would be the prime factor in determining the amount of increased traffic GO Transit could use in peak hours without disrupting CP freight operations.

The study team estimated about six or seven trains, each with a 1,600-seat capacity, could be accommodated at morning and evening rush hours under current conditions.

Given the constraints of the single-track tunnel, 15-20 trains could be accommodated on a daily basis when service is extended in the 1990s, he said.

The study estimated about 2,000 Hamilton residents currently use either GO bus or train daily. It predicted that number would double by 2011 after the proposed rail expansion.

Alderman Brian Hinkley said the study appeared to indicate there was insufficient demand for a higher level of GO service. "I am sick and tired of hearing that argument because (it) is totally wrong," he said.

"I think we're making a wrong decision for the people of Hamilton-Wentworth. We need to spend the money now because we know this city is going to grow."

Mr. Sears said a larger-scale expansion, based on the TH&B site terminus, could not be achieved without incurring prohibitive reconstruction costs to widen the Hunter Street tunnel.

He said the study's projections were more than adequate to meet the demands of the city and the region. "The fact of the matter is that this city and this committee has to endorse a program and get this thing going."

The GO Transit board, composed of regional chairmen along the route, endorsed the TH&B site last month. The ministry will give presentations to area municipalities this month and conduct public hearings next month before drafting a report for an environmental assessment this fall.

GO Transit plans lauded by region

New parking included in plan

By RAY Di GREGORIO
The Spectator

PROPOSED GO Transit improvements through Burlington will satisfy this area's commuter needs, says Halton's planning commissioner.

The provincial task force studying the expansion of train service has decided a new station is needed at Waterdown Road, in western Burlington and that the CP/TH&B station in downtown Hamilton should be used for the expanded service.

Open houses will be held in Burlington and Hamilton within three weeks to garner public opinion on the plan before it's officially recommended to the transportation ministry.

The Burlington end of the deal is everything that Halton wanted, said regional planning commissioner Rash Mohammed yesterday after GO Transit representatives addressed Halton's planning and public works committee.

"We're very pleased to see that the Waterdown Road station is seriously considered," said Mr. Mohammed. "This makes us very optimistic."

Earlier this year Halton asked the province to make the Waterdown Road station, at Highway 403, an immediate priority because of congestion problems at other area Go Transit stations.

The Waterdown Road station project could be under way by the end of 1990. The ministry must first approve the plan then obtain the necessary environmental approvals for construction, said the GO Transit officials.

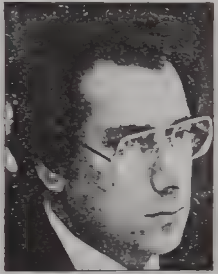
Meanwhile Burlington commuters will get some relief with a new station at Appleby Line. Construction is under way and the trains should be rolling there by October the committee was told.

The province is also looking to provide extra parking at the congested Fairview Street station. Negotiations are under way for the purchase of adjacent vacant land, the Halton committee was told.

All the projects are part of the province's expansion plans for GO service, which will provide full train service through Halton to Hamilton. Full service from Toronto now ends at Oakville, with only rush hour service through Burlington and into Hamilton.

The public forums wi

- May 31, 3-9 p.m. at C
in Hamilton
- June 1, 4 30-9
Public School
- June 2, 3-9
Centre in



Vince Agro: prosperity

15 of 16 speakers oppose TH&B station as GO terminal

NORTH-END residents were out in force last night to try to derail a consultant's recommendation to run a GO Transit rail line to the TH&B station in downtown Hamilton.

But the environment and transportation committee will make no recommendation on a site when the matter goes to city council May 31.

The committee heard a presentation from John Sutherns of McCormick Rankin Consultants who recommend placing the GO station at the TH&B site, now owned by CP Rail, in downtown Hamilton.

"It won't be overnight, but the CP/TH&B site would be far preferable due to economic benefits," he said.

Mr. Sutherns cited proximity to the downtown core as the main reason.

But 14 of 15 speakers attacked the TH&B proposal, saying the city should consider the CN station on James Street North.

Judy Creighton, a Hamilton resident who works in Toronto, carried a petition with 250 signatures of commuters who take trains to Toronto from the CN station. There are three trains a day from the CN station and she called for this service to continue.

"There's no parking at the TH&B. I'd have to drive and pay for parking on top of the $200 a month I already pay for commuting."

Rev Ron Burridge, a James Street North businessman, also complained of no parking at the Hunter Street East station. "James Street North is much easier to get to. It would help our area, which is still downtown."

John McCullum of Transport 2000, an advocacy group for passenger rail service, said GO rail service into the CN station would help make Hamilton a terminus to the Niagara region.

"It's just got to be the CN station. That's where the surrounding real estate development is possible. Hamilton is a great place. Why live in the shadow of Toronto?"

A motion supporting the TH&B location was moved by Ward 2 Alderman Vince Agro, but did not get a seconder. A motion by Ward 5 Alderman Dominic Agostino asking council to study the CN location also failed to get a seconder

Mr. Agro said there will be spin-off benefits for the north end, even if the line goes to the TH&B station. "There is tremendous prosperity in store for the north end no matter where it goes," he said.

Judy Creighton: petition

City council must decide best way for commuters to GO

By JANE COUTTS
The Spectator 28·5·88

THE DESTINATION — better services for commuters — is clear The route is not.

And as Hamilton sets out on its way to becoming a full participant in southern Ontario's commuter network, the question remains: Which way should we GO?

City council is to vote next week on a planning and development committee recommendation supporting the TH&B station on Hunter Street East as the home for expanded GO train service.

The recommendation endorses a report, the result of a year of work by Mississauga-based consultants McCormick Rankin who next week will be hosting three information centres on their findings to collect public reaction in Hamilton and Burlington.

Council's decision and the feelings of the public will both be included in the final report the consultants send on to Minister of Transportation Ed Fulton.

The recommendation is not without opponents. Many feel restricted parking in the core, the impact on houses along the TH&B line and CN rail's superior connections to the Niagara peninsula make CN's James Street North station the better bet as the home of GO service in Hamilton.

But more than two years ago, regional council — including the 17 Hamilton councillors — unanimously endorsed the Hunter Street East TH&B station as the home of GO. Some are rethinking that vote now — and there's undeniable support from commuters and north-end businesses and residents for the CN site.

Consultant John Sutherns of McCormick, Rankin says there were five main points to be considered in choosing between the TH&B station and the CN station : the transportation effect, economic effect, cost, social effect and the natural or environmental impact.

"What stood out very, very strongly in favor of the TH&B were a combination of transportation effect and economic effect," he said in an interview. "In the other three categories there were no major differences."

One of the main goals of the study was to think in terms of developing "integrated transit locations," Mr. Sutherns said.

The integrated stations combine local bus service, GO transit buses and GO trains.

In Hamilton, GO buses and GO trains could be routed to either terminal with little trouble, by transferring GO buses from the Rebecca Street bus station to which ever station is chosen.

Linking up with the HSR, however, is another issue.

"The TH&B stood out as far superior for linking with the local system," Mr Sutherns said.

"The main reason is the HSR has 23 bus routes that actually pass through downtown and of those 20 pass within two blocks of the TH&B while only two pass within two blocks of the CN station."

Accessibility to other bus routes far outweighs the importance of parking, the consultants say. Commuters who plan to arrive by car won't be encouraged to use the downtown station in any case, Mr. Sutherns says.

Instead, a proposed Waterdown Road GO station will be designed for people arriving by car from Hamilton Mountain, Ancaster, Dundas and Flamborough.

Further, they say, a lot of the parking around the CN station will probably disappear when the proposed north end Perimeter Road linking Burlington Street and Highway 403 is built.

The economic effect of the GO — to either station — is not expected to be profound, Mr. Sutherns said.

"There's fairly healthy economic activity in Hamilton right now and it doesn't need a stimulus," he said.

But, by measuring a 750-metre (2,460 feet) radius — approximately a 10-minute walk — from both stations, the consultants found about 10 times the potential space for retail and commercial development around the TH&B than surrounds the CN station.

All of Hamilton's major tourist attractions — Copps Coliseum, the Art Gallery, of Hamilton, Hamilton Place, the Hamilton Convention Centre — also fall within that radius, while the CN lies within walking distance only of the proposed waterfront park.

The consultants concluded a 1 per cent change in the interest rate would have more impact on Hamilton's economy than expanded GO

☐ Continued on B3

Committee favors the TH&B station on Hunter Street East.

Full service unneeded: critics

Consultants say compromise to draw more riders

IT'S SOMETHING of a chicken-and-egg argument.

There are those who say Hamilton's use of GO transit doesn't justify full service to the city

Others say you won't get much ridership as long as the service is so unsatisfactory — buses to one spot, trains to another and locked into rigid schedules.

The consultants say compromise.

Put the trains and buses in one spot — so you can travel one way by train, another by bus and still wind up in the same place. That alone should increase ridership, the consultants say.

The consultants recommend shifting existing GO train service in Hamilton from the CN station and its Oakville connection to the CP rail Toronto-connecting line at the TH&B station.

They also call for a station at Waterdown Road, where commuters could drive to catch a Toronto-bound train, so parking and downtown traffic wouldn't be a problem around the TH&B

And, as use grows, you add more trains — especially during rush hour, when the highway is congested — and buses. If ridership keeps growing, full service will ultimately follow

But, according to project manager John Sutherns of the consulting firm McCormick Rankin, which did the study, there isn't the ridership now to justify full service.

GO Transit statistics show that GO train use by Hamiltonians now is minimal

There are 4,698 places available on the three Toronto-bound GO Trains that leave Hamilton every weekday morning. Only 340 of them are occupied — and only 271 people use the trains to come back, on average.

Buses — with their more flexible schedules — fare a little better

About 1,500 people head in to Toronto weekdays on express buses from Hamilton, 600 of them in the morning rush hour, when buses are about 85 per cent full.

Another 500 head out on buses to catch GO trains further down the line. Those buses run 40 per cent full in peak hours and 30 per cent full the rest of the time.

Lakeshore buses aren't nearly as popular — they get only some 350 riders daily, 100 of them in the morning peak period.

Technically, Mr. Sutherns says, Hamilton's expanded GO transit service can go to either the CP/TH&B or the CN station.

Both the railways can handle the extra traffic of expanded service to a point, and both could manage to grow with expanded service — the TH&B by widening the Hunter Street West train tunnel that takes its tracks out of downtown, and CN by running another track bayside.

Cost of the expansions would be covered by the province, which would then give title to the railways and pay to run trains on the new lines.

For either station, including renovations, adding bus bays and tracks, the cost of expanding service is calculated to be about $130 million.

Council must decide way to GO

☐ Continued from B1

service, Mr. Sutherns said

The cost for either option is predicted to be about $130 million. It will be expensive to double the Hunter Street West railroad tunnel behind city hall if GO decides to run more than 20 trains a day from the TH&B — but it would also be expensive to put fill in the harbor or reorganize the Stewart Street yards to accommodate increased GO service out of the CN station.

Both routes will have an impact on the natural environment, Mr. Sutherns says and both are subject to an environmental assessment and possibly a full hearing

Trains running out of the TH&B are expected to cause a one decibel increase in noise on the tracks running through residential areas; but putting the trains out the CN lines will probably require fill in the harbor.

The timing for the changes proposed is hard to call — the environmental assessment will likely take at least a year and there are a lot of political decisions to be made about how taxpayers' money can best be spent on public transit.

There is a limited amount of money in the pot for transit and everything from a new subway line in Toronto to the bus system in Thunder Bay competes for provincial dollars

Regional Chairman Bill Sears — like other regional chairmen around Toronto, a member of the GO board of directors — is concerned that if city council goes against planning and development and votes for the CN station, it could put the whole project at risk.

While better GO service will inevitably come to Hamilton in some form, he says, changing the city's position on which station it should come to could mean delays and Hamilton losing some of its options because the board will take other factors into consideration when it comes time to make those political decisions

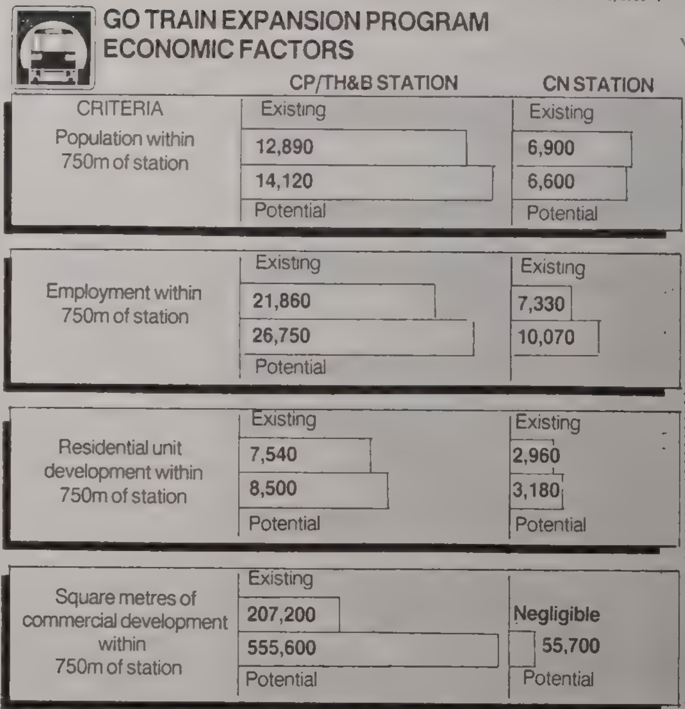
"The longer we procrastinate and vacillate the more opportunity it gives other municipalities to make decisions and ask the government for service for their communities and the province may choose to listen to them. We could lose the opportunity to be masters of our own fate."

Mr. Sears backs TH&B for a variety of reasons — primarily because he sees downtown Hamilton as the downtown of the region and wants to see what he believes will be the stimulus of the GO station right in the city's core

Mayor Bob Morrow says there are strong arguments for both stations, but he believes north-end revitalization will go ahead even without GO and agrees it's most important to present a unified front to provincial officials on the matter.

"The last thing I want to do is give anyone at Queen's Park or GO the chance to say there wasn't a unified postion so we don't have to move as fast in Hamilton " he said

Mr. Morrow believes council will stand by its original endorsement of the TH&B station.



Burlington Post 22·5·88

King Rd. bridge urged

A bridge or underpass will desperately be needed at King Road, on account of increased GO train traffic, Burlington aldermen agree.

The consensus followed a presentation outlining GO Transit plans as service is extended to Hamilton in a few years. The presentation was made to Burlington's public works committee Monday night.

Alderman Barry Quinn said that a level crossing at King Road is already constantly blocked by train traffic, and that an estimated 28 extra GO trains per day might force the city to close the street completely.

"You can't put more trains down there, and for safety reasons, expect things to work more smoothly because it's not working now," said Quinn.

The province isn't recommending a costly grade separation for the location, the committee was told Such a project usually costs well in excess of $1 million.

Alderman Walter Mulkewich thinks a station planned for Waterdown Road could be Burlington's busiest, if Hamilton commuters choose to drive there. "There's still a lot of unknown questions that have to be looked at carefully."

The public's opportunity to view GO Transit's plans for Burlington takes place at Fairfield public school on June 1, from 4:30-9 p.m.

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Support is growing

Reaffirm TH&B plan

Hamilton-Wentworth Chairman Bill Sears and Hamilton Mayor Bob Morrow are right. The only practical way in which city council can move Hamilton closer to expanded GO train service is by supporting the TH and B station on Hunter Street East as its choice for the downtown terminal.

As the latest round of public information meetings this week confirmed, the clear majority of Hamilton citizens, together with GO planners, prefer the TH and B station to the CN station on James Street North.

The TH and B's close proximity to downtown and convenient linkage with the bus network are advantages which Hamilton is fortunate to have. The CN station, in contrast, is beyond walking distance of the city's major attractions.

If city council backtracks on its previous support of the TH and B, or tries to suggest using both stations, it will in effect tell the province it can't make up its mind. Any procrastination will only invite more delay.

If anything, the case for the TH and B station is stronger than it was more than two years ago when regional council endorsed it unanimously.

Area residents who attended public hearings have supported the TH and B route by a 4-1 margin, and GO staff report that support appeared to be growing if this week's meetings were any indication. In addition, technical studies have shown it's a viable proposition.

Planners have determined the existing Hunter Street tunnel can accommodate a significant improvement in service, involving up to six or seven trains during peak periods. The tunnel wouldn't have to be reconstructed until future demand justified a service of 20 trains or more.

While parking is in short supply, the TH and B station can be integrated with the Hamilton Street Railway system without any trouble. Commuters who prefer to arrive by car can use the proposed Waterdown Road station, serving the western parts of Hamilton and Burlington, Flamborough, Dundas and Ancaster.

Another major drawback of the CN route is the likelihood that fill would be required in Hamilton Harbor to accommodate additional GO tracks. Can the city afford to further compromise the bayfront with more railway tracks, when most cities are properly going in the opposite direction by trying to open and beautify their waterfronts?

Proponents of the CN station have emphasized it could mean a commercial rejuvenation of James Street North and surrounding neighborhood. Perhaps, but commuters are busy people who aren't likely to spend time browsing in nearby shops and stores. It should be remembered, as well, that Hamilton has had some GO service since 1967 and it hasn't created new business around the station.

Of the two stations, the TH and B clearly has the most potential for retail and commercial rejuvenation. In any case, the economic aspects should be secondary to the first priority: the best possible transportation.

With the project subject to environmental assessment, and possibly a full hearing, the city can ill afford to lose more time by second-guessing itself. The evidence points to the TH and B and council should act accordingly.

SPECTATOR 28.5.88

ONTARIO GOVERNMENT NOTICE

GO TRAIN SERVICE EXPANSION PROGRAM - BURLINGTON TO HAMILTON STUDY

BACKGROUND

The Government of Ontario is expanding GO Train service between Oakville and Burlington. A study to assess the further expansion of service to Hamilton is nearing completion.

The latter study is a joint Provincial/Municipal undertaking involving the Ministry of Transportation, GO Transit and the Regional Municipalities of Halton and Hamilton-Wentworth. Others involved in the study include local municipal staff, government agencies, technical organizations, interest groups, elected officials and interested individuals. The study is subject to the Environmental Assessment Act of Ontario.

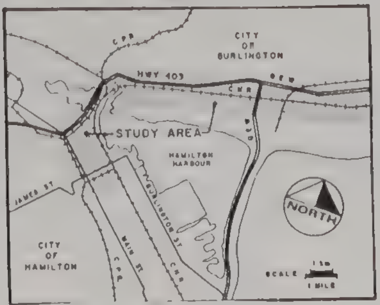
PUBLIC PARTICIPATION

The alternatives under study were introduced at a series of public information centres in June 1987 and the analysis of these alternatives together with preliminary technical recommendations were reviewed during a second series of information centres in November 1987. Final detailed recommendations have now been prepared, and a third round of information centres has been arranged at which any interested persons may review and comment on the recommendations. You are encouraged to attend one of the following information centres to express your views.

Tuesday, May 31, 1988
3:00 p.m. to 9:00 p.m
Hamilton Central Library
55 York Boulevard (Jackson Square)
Hamilton

Wednesday, June 1, 1988
4:30 p.m. to 9:00 p.m
Fairfield Public School
388 Plains Road West
Burlington

Thursday, June 2, 1988
3:00 p.m. to 9:00 p.m
Webster Room, 3rd Floor
Hamilton Convention Centre
115 King Street West
Hamilton



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Ministry of Transportation
Ontario

John Sutherns (left) and Howard Kirkpatrick view plans for the new station at Waterdown Road. Photo by ROBERT SKEOCH

Majority at open house back third GO Station

By JEFF McFADDEN

The most common question of GO Transit officials about the proposed Waterdown Road station is "how quickly can you build it?"

A majority of people attending an open house on the plan on Wednesday evening were solidly in favor of giving this city a third station (after Fairview Street and Appleby Line, which is slated for a fall opening)

The reason for the eagerness lies in the maddening daily ordeal of fighting the crowds at the Fairview station

Larry Renaud, a consultant who commutes to Toronto, can't wait for GO to construct more stations and therefore ease the morning and evening congestion at Fairview.

"The whole GO train system is very efficient except for getting in and getting out of it," he says.

Simply finding a parking spot at the Fairview station can be "crazy", he notes

Pat Shoots, a King Road resident, also looks forward to having easier access to Toronto, thanks to the extra station and full train service to Burlington (due to start in the early 1990s)

However, she is slightly concerned that the additional trains could cause problems at the level crossing on King Road north of Plains Road

"There's always trains," she says, adding that more trains could close the road down more often then it is now

Shoots would like to see a grade separation crossing built there, allowing for uninterrupted traffic flow.

If there is a concern about the GO

see DIESELS pg 4

Burlington Post June 3/88

Diesels make most noise

continued from pg 3

station, it is noise. Steve Schizns, an engineer for McCormick Rankin, the project consultants, says some residents are worried that more trains means more disruptions

However, both he and GO officials insist it is the slow moving diesels of CN which create most of the noise and GO has no control over this

"We can't make it any better, but we don't want to make it any worse," says Brian Ogden, project manager for the Ministry of Transportation and Communications

The open house was the third GO has held in the city. The first two were in June and November of last year. Comments from those open houses went towards creating the final proposal, exhibited Wednesday.

Ironically, Schizns says that the Waterdown Road station, although located in Burlington, will act as a second Hamilton station The first, at the CN station in downtown Hamilton, will cater mostly to those using the city's transit system Waterdown Road will attract those looking to park their cars for the day

"It's very heavily skewed towards Hamilton .. There are very few people in Burlington west of Waterdown (Road)," he says.

Currently people from Hamilton drive to either the Fairview or Oakville stations. Only about 68 per cent of those using the Burlington station are from this city.

Before the Waterdown Road station can be built, it will have to pass an environmental assessment, which will take until about 1990. However, Schizns says it shouldn't take long for construction to begin after that

"There will be pressure politically to get something as soon as we get environmental assessment approval," he says

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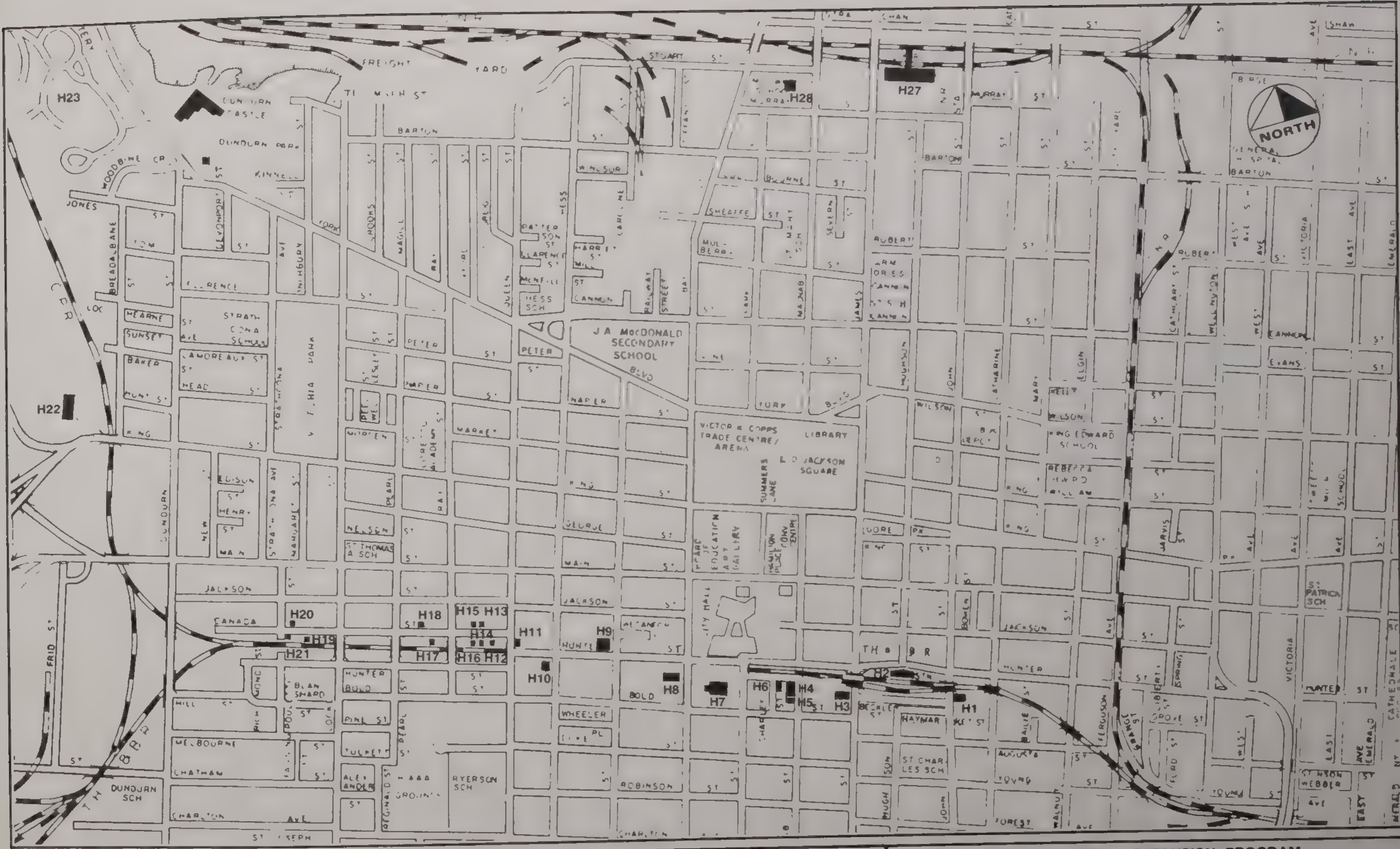
APPENDIX D

ATTENDANCE REGISTERS AND COMMENT SHEETS

Appendix L

Heritage Features



EXHIBIT

L1

LOCATION PLAN FOR HISTORIC FEATURES IN HAMILTON

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

Ministry of Transportation

GO TRANSIT

HAMILTON-WENTWORTH

APPENDIX L: HERITAGE FEATURES

This Appendix contains description sheets for the identified heritage features in Hamilton near the CN and CP Rail corridors under study for the GO Train Service Expansion Program. The sheets are copied from "Social Environment Technical Report S11.0 - Man-Made Heritage" for the GO-ALRT Program Hamilton Project. The report was prepared by Meek Klausen Servage Walker, Architects and Planners, for Giffels Associates Limited, and issued by the Ministry of Transportation and Communications on May 15, 1984. The features may be located on the Key Plan.

HERITAGE FEATURE

LOCATION: 510 York Blvd.

NAME: Dundurn Castle

OWNERSHIP: Municipal

CURRENT USE: Museum and offices; public park

DATING: Built 1832-35

FORMER USES: Residence of Sir Alan MacNab

DESCRIPTION: "Son of a respected but deeply indebted government officer, Allan MacNab (1798-1862) yearned for the stature of a Scottish Laird. Dundurn Castle, a regency mansion in the romantic Italianate style, was central to his fancy, but also to his many financial problems." (Weaver)

"This mansion was built 1832-35 and named after the family ancestral seat in Scotland. Leader of the Tory Conservatives, MacNab was speaker of the Legislative Assembly on several occasions and Prime Minister of Canada 1854-56." (plaque text)
Architect: Robert Charles Wetherell

SOURCE:
1) "Hamilton, An Illustrated History" - John C. Weaver
2) Historic plaque erected by the Ontario Archaeological and Historic Sites Board
3) Field Survey, 1983

RECOGNITION: Historical Designation: By-law No. 77-239
LACAC: Buildings of Interest

PHOTOGRAPHS:
1) Front facade
2) Rear facade and grounds

HERITAGE FEATURE

LOCATION: York Blvd. at Dundurn Street

NAME: Hamilton Military Museum

OWNERSHIP: Municipal

CURRENT USE: Public museum

DATING: c.1850

FORMER USES:

DESCRIPTION: One storey painted stucco and masonry structure, with simple hip roof, in Regency style matching Dundurn Castle.

SOURCE: Field Survey, 1983

RECOGNITION:

PHOTOGRAPHS: 1) South facade, facing York Blvd.

HERITAGE FEATURE

LOCATION: 51 Stuart Street

NAME: Hamilton Custom House

OWNERSHIP: Municipal

CURRENT USE: Vacant

DATING: 1858 - 60

FORMER USES: Custom House, macaroni factory

DESCRIPTION: "Designed by Frederick James Rastrick, this sandstone building is an authentic example in Canada of the Italian Renaissance Revival. The rhythmic progression of arched and pedimented windows, the monumentality of the stonework, the elaborate treatment of the central bay and the finesse of the classical decoration substantially contribute to the artistic success of the building. Although presently in a state of neglect and in need of extensive renovation, the Custom House stands as one of canada's finest examples of revival architecture." (Chapple)

SOURCE: Site Survey, 1983
Architectural and Historical Report by Nina Chapple (LACAC)

RECOGNITION: LACAC "Historic" and "Architectural Merit"

PHOTOGRAPHS: 1) Stuart Street facade
2) Rear elevation

H27

HERITAGE FEATURE

LOCATION: 380 James Street North

NAME: Canadian National Railways Station

OWNERSHIP: Canadian National Railways

CURRENT USE: Rail Station and Maintenance Yard

DATING: 1931

FORMER USES: Rail Station

DESCRIPTION: Designed in the Neo Classical style, this stone structure features a grand pedimented entry supported by Ionic columns The formal grandeur of the station and its relative isolation make it a landmark in Hamilton. As such, it provides an effective terminus for the James North streetscape of 19th century commercial buildings extending south towards Gore Park.

Architect: John Schofield

SOURCE: Field Survey, 1983

RECOGNITION: LACAC - "Architectural Merit"

PHOTOGRAPHS: 1) Front facade
2) Station from east, in context

H22

HERITAGE FEATURE

LOCATION: [illegible] King Street West

NAME: Cathedral of Christ the King

OWNERSHIP: Roman Catholic Diocese of Hamilton

CURRENT USE: Cathedral

DATING: 1933

FORMER USES:

DESCRIPTION: Designed in the Gothic Revival style, the cathedral and its adjacent structures serve a variety of functions for the Christ the King parish and the diocese of Hamilton. The Chancery Office (originally St. Thomas Aquinas School) was built in 1922 and enlarged in 1933 with the construction of the cathedral. In 1967 the original chancery office was built. In 1970 a new school was erected on the site with the old school being converted into its present function as chancery office. In 1981 the interior of the cathedral suffered a fire. Restoration and renovation work has just been completed, in time for the cathedral's 50th anniversary celebrations.
Architect: William Souter

SOURCE: Field Survey, 1983
Diocese Archivist

RECOGNITION:

PHOTOGRAPHS: 1) East facade
2) Front (South) facade

H11

HERITAGE FEATURE

LOCATION: 107 - 111 Queen Street South

NAME: Brick Row

OWNERSHIP: Private

CURRENT USE: Residential

DATING: 1885

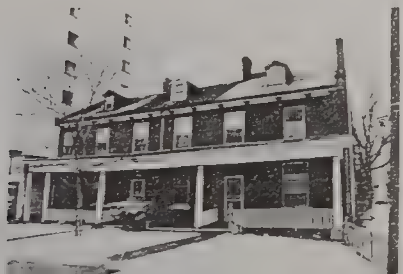
FORMER USES: Residential

DESCRIPTION: This three unit row house is simple in style, yet has similar detailing to others of its era. Bracketed eaves and a continuous covered porch give character to an otherwise plai structure.

SOURCE: Field Survey, 1983

RECOGNITION: LACAC "Historic", Architectural Merit

PHOTOGRAPHS: 1) Queen Street facade



H10

HERITAGE FEATURE

LOCATION: 114 Hess Street South

NAME: Brick House

OWNERSHIP: Private

CURRENT USE: Residence

DATING: C.1880

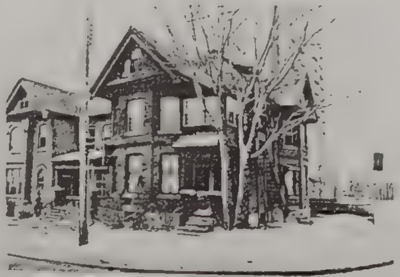
FORMER USES: Residence

DESCRIPTION: The corner location of this Victorian residence encouraged the use of two-storey projecting bays, capped by triangular gables, on both street facades. This duality is emphasized by the identical window treatment, brickwork and detailing.

SOURCE: Field Survey, 1983

RECOGNITION: LACAC: Architectural Merit

PHOTOGRAPHS: 1) View from Hess and Hunter Streets



H9

HERITAGE FEATURE

LOCATION: 162 Hunter Street West

NAME: CHCH Television

OWNERSHIP: CHCH Television

CURRENT USE: Television production

DATING: 1983

FORMER USES: Residence

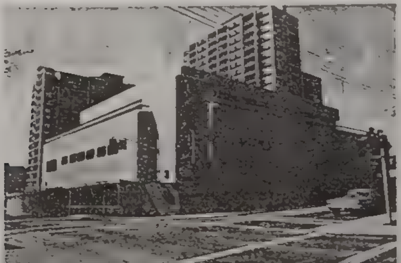
DESCRIPTION: This modern "space age" building features large areas of flat and curved aluminum metal cladding panels.

Architect: Moffat Kinoshita Partnership

SOURCE: Field survey, 1983

RECOGNITION:

PHOTOGRAPHS: 1) View of corner at Hunter and Caroline Streets



H8

HERITAGE FEATURE

LOCATION: 130 Bay Street South

NAME: St. Marks Anglican Church

OWNERSHIP: Church Membership

CURRENT USE: Church

DATING: C. 1880

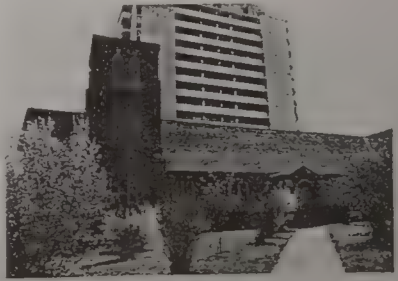
FORMER USES: Church

DESCRIPTION: This modest single storey Gothic Revival church features a three storey bell tower. The simple peaked roof is uninterrupted by gables or windows, except at the crossing. The low brick walls, with slender paired windows, emphasize the domestic scale of this church, which provides a useful link to the adjacent homes.

SOURCE: Field Survey, 1983

RECOGNITION:

PHOTOGRAPHS: 1) Front facade and grounds from Hunter and Bay Streets



H7

HERITAGE FEATURE

LOCATION: 75 Hunter Street west

NAME: Central Public School

OWNERSHIP: Municipal

CURRENT USE: School

DATING: 1853

FORMER USES:

DESCRIPTION: Sited south of Hamilton Civic Square, this beautiful, symetrical building features three bays of limestone construction with the center bay highlighted by a five storey clock tower.

SOURCE: Field Survey, 1983

RECOGNITION: LACAC "Historic" and "Architectural Merit"

PHOTOGRAPHS:
1) Front facade from Hunter Street and Bay Street
2) East facade and grounds

H8

HERITAGE FEATURE

LOCATION: 109-111 Charles Street

NAME: Birely House

OWNERSHIP: Private

CURRENT USE: Semi-detached housing

DATING: 1855

FORMER USES: Residence

DESCRIPTION: "Built in 1855 by Lewis D. Birely this double townhouse was constructed during Hamilton's "Limestone period". Although built in the vernacular style as opposed to any particular historic style, the townhouses reflect a high level of design and craftmanship. This building is an integral part of the MacNab Street Presbyterian Church block; a historical island of architectural merit in the city centre." (Chapple).

SOURCE: Field Survey, 1983
Architectural and Historical Report by Nina Chapple (LACAC)

RECOGNITION: LACAC - "Architectural Merit"

PHOTOGRAPHS:
1) Front facade from Charles Street.
2) Buildings in surrounding context.

H4

HERITAGE FEATURE

LOCATION: 116 MacNab Street South

NAME: MacNab Street Presbyterian Church

OWNERSHIP: Church Membership

CURRENT USE: Church

DATING: 1857

FORMER USES:

DESCRIPTION: "The MacNab Street Presbyterian Church, represents an early and noteworthy example of the Gothic Revival church in Hamilton. Substantial and straightforward in design, the church was built of limestone, locally quarried from the escarpment, and, as such, was part of a significant group of stone buildings erected in Hamilton in the 1840's to the 1860's." (Chappple)

Architect: Albert H. Hills

SOURCE: Field Survey, 1983
Architectural and historic Report by Nina Chapple (LACAC), November, 1979

RECOGNITION: LACAC & ACO "Considerable Architectural Merit"

PHOTOGRAPHS: 1) View from Hunter Street
2) North facade details

H3

HERITAGE FEATURE

LOCATION: 124 James Street South

NAME: Limestone House

OWNERSHIP: Private

CURRENT USE: Offices

DATING: 1850

FORMER USES: Private Residence

DESCRIPTION: This three storey limestone building with raised basement is the sole remnant of a four building stone terrace completed in 1859. Original windows have been removed and replaced with plate glass, in a recent renovation.

SOURCE: Field Survey, 1983
Architectural and Historic Report, N. Chapple (LACAC),1981

RECOGNITION: LACAC - Considerable Architectural Merit

PHOTOGRAPHS: 1) James Street facade

HERITAGE FEATURE

LOCATION: 135 James Street South

NAME: Alexandra Square

OWNERSHIP: Private

CURRENT USE: Commercial offices

DATING: C. 1965

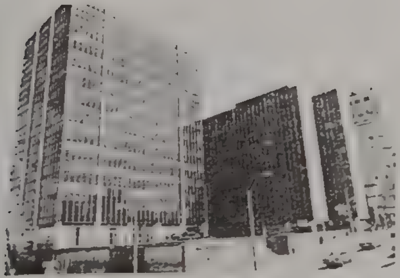
FORMER USES: Offices

DESCRIPTION: This modern office tower of curtain wall construction is set back from James Street South, on a raised plaza.

SOURCE: Field Survey, 1983

RECOGNITION: LACAC: Architectural Merit

PHOTOGRAPHS: 1) View from James and Beckley Streets



HERITAGE FEATURE

LOCATION: 36 Hunter Street East

NAME: TH&B Station

OWNERSHIP: TH&B Railway

CURRENT USE: Offices, Freight Train Depot

DATING: 1932

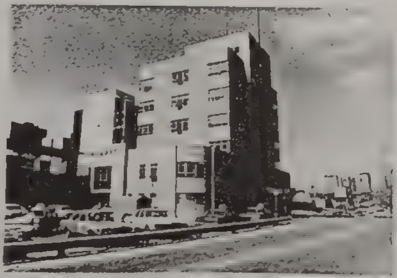
FORMER USES: Passenger Railroad Station,
Freight Express Depot

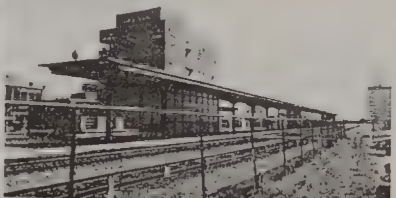
DESCRIPTION: "When Fellheimer and Wagner, the architects for the New York Central line, were brought from New York City, they discarded traditional design with its applied surface ornamentation and opted instead for the clean straight lines and flat smooth surfaces of the Art Modern style. Corner windows cogently state the use of the modern curtain wall with an internal structural system. The interior has likewise survived intact." (ACO pamphlet)

SOURCE: Field Survey, 1983
The Architectural Conservancy of Ontario
(undated pamphlet)

RECOGNITION: LACAC and ACO; "Historic" and "Architectural Merit"

PHOTOGRAPHS: 1) Front and side facades, from Hunter Street
2) Through tracks and passenger platforms





H1

HERITAGE FEATURE

LOCATION: 135 John Street South

NAME: Brick Apartments

OWNERSHIP: Private

CURRENT USE: Assorted commercial with apartments above

DATING: C.1890

FORMER USES: Commercial

DESCRIPTION: This four storey, orange brick building features a unique central two storey passageway from street to rear yard. Also of note are the two projecting bay windows with divided panes, and the alternating flat and semi-circular window arches.

SOURCE: Field Survey, 1983

RECOGNITION: CIHP List

PHOTOGRAPHS: 1) John Street facade

Appendix M

Correspondence

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

Office of the Clerk
119 King Street West, 15th floor
Hamilton, Ontario

526-4140

Mailing Address:
P.O. Box 910, Hamilton, Ontario
L8N 3V9

Refer to File No
Attention of
Your file No

June 19, 1987

McCormick, Rankin & Assoc.
60 Briarwood Road
Port Credit, Ontario
L5G 3N6

Dear Sirs:

Re: Transportation Services Committee
Report 7-87, Item 1

At the regular meeting of Regional Council held Tuesday, June 16th, 1987 the following recommendation was concurred in:

1. Status of the Go Transit Rail Extension into Hamilton

That the Consultant (McCormick Rankin) be requested to ensure that the economic analysis of the various service alternatives address the benefits and disadvantages to the Hamilton economy of extending the present one-way directional flow of service compared to adding trains in the reverse direction during peak periods and adding trains in both directions during the off peak period.

Should you have any question, feel free to call Mr. H. Schweinbenz, Commissioner of Transportation, 527-4441.

Yours very truly,

Jean Roy

P. Noe Johnson, M.A., LL.B.
Regional Clerk

PNJ/st

cc: H. Schweinbenz

Regional
NIAGARA

OFFICE OF THE CLERK
The Regional Municipality of Niagara
2201 St. David's Road, P.O. Box 1042
Thorold, Ontario L2V 4T7
Telephone (416) 685-1571

July 17, 1987
Our Ref: PW 14-87
DEA-308-22

The Honourable Ed Fulton, M.P.P.
Minister of Transportation
and Communications
West Tower
1201 Wilson Avenue
Downsview, Ontario
M3M 1J8

RECEIVED
JUL 23 87
Transportation & Communications

Dear Honourable Sir:

Re: GO Transit Service
Expansion Program

The Council of the Regional Municipality of Niagara, at its meeting of July 16, 1987, approved the following recommendation of the Public Works and Utilities Committee:

"That the Ministry of Transportation and Communications be petitioned to study the potential for an expansion of the Province of Ontario's GO Transit System into the Regional Municipality of Niagara, and further;

That the Ministry consider future integrated service to the Region of Niagara as part of its proposed GO Train Service Expansion Program from Burlington to Hamilton."

A copy of the background report, DEA-308, item 22, is enclosed herewith for your reference.

Yours very truly,

Carla Cavasin, per

Allan R. Pierson
Regional Clerk

:sm
Encl.
cc: Mr. B. Ogden, Project Manager
MTC Toronto Area Co-ordinating Office
Mr. J. Sutherns, Consultant
McCormick Rankin
C.H. Eidt, P. Eng.
E.R. Simonen, P. Eng.

THE REGIONAL MUNICIPALITY OF NIAGARA
Public Works Department

Report to: Mr. Stan Pettit, Chairman, and Members of the Public Works and Utilities Committee

Councillors:

GO Transit Service Expansion Program

The following recommendation is submitted for Committee's consideration:

> That the Ministry of Transportation and Communications be petitioned to study the potential for an expansion of the Province's GO transit system into the Regional Municipality of Niagara, and further, that the Ministry consider future integrated service to Niagara as part of their proposed GO Train Service Expansion Program from Burlington to Hamilton.

As part of the GO Train Service Expansion Program, the Government of Ontario is in the process of extending full service from Oakville to Burlington. At the same time, a study to assess the further expansion of GO Train service from Burlington to Hamilton has been initiated.

The study to assess the expansion of GO Train service between Burlington and Hamilton is a joint Provincial-Municipal undertaking involving the Ministry of Transportation and Communications, GO Transit and the Regional Municipalities of Hamilton-Wentworth and Halton. Basic alignment and station location alternatives will be considered and an implementation plan recommended. This study may provide an opportunity for the Province to plan now, for a further expansion of the GO Rail or Bus system into Niagara. The proposed alternatives for the alignments and stations should be developed with orientation toward an expanded service to Niagara. The stations in both Burlington and Hamilton should be multi-modal in design to allow for car and bus connections.

Staff has recently met with Mr. Howard J. Levine who is a researcher for the Liberal Party of Ontario, and who is currently working on a transit project for the Minister of Transportation and Communications. Mr. Levine has been asked by the Minister to review the potential for region-wide transit service in the Regional Municipalities of Niagara, Hamilton-Wentworth and Ottawa-Carlton.

With these two projects underway, it is an opportune time for the Province to plan today for any future GO service into Niagara. With the twinning of the Burlington Bay Skyway and development occuring throughout the Q.E.W. corridor, the Province should ensure that all options are maintained for future service connections to the existing GO system.

Approved by:

E.R. Simonen, P.Eng.
Environmental Services
Division Engineer

Respectfully submitted:

Conrad H. Eidt

C. H. Eidt, P. Eng.
Director of Engineering

RJJ/gw (1073G)

OCT 20 1987

Mr. Allan R. Pierson
Regional Clerk
The Regional Municipality of Niagara
2201 St. David's Rd., P.O. Box 1042
Thorold, Ontario.
L2V 4T7

Dear Mr. Pierson:

Re: Your Reference PW-14-87, DEA-308-22

Thank you for your letter of July 17, 1987 conveying the recommendations of the Council of the Region of Niagara concerning the GO Transit Service Expansion Program.

I would point out that the mandate of the Toronto Area Transit Operating Authority (GO Transit) is to provide for interregional commuter transit service between the Regional Municipalities of Peel, York, Durham, Halton, Hamilton-Wentworth and Metropolitan Toronto. The Ministry has no current plans for expanding the jurisdiction of GO Transit outside what is recognized as the Toronto commutershed.

However, let me assure you that the current Burlington to Hamilton GO Rail Expansion Study does include in its evaluation of Hamilton terminal station sites the flexibility for providing multi-modal transportation service and future expansion. And further, the selected intermediate station(s) will provide for the full integration of local and external travel.

My staff would be pleased to assist the Region in a study of its regional public transit needs to maintain and support the Region's economic goals and for general mobility within the area. This study could include the level and type of accessibility required into Hamilton and beyond into the Greater Toronto Area. Such a regional transit study would be independent but supportive of the current ongoing planning activities in the Greater Toronto Area.

I trust this adequately explains the Ministry's current position and our willingness to cooperate with the Region of Niagara in addressing the issues raised.

Yours sincerely,

ORIGINAL SIGNED BY
HON. ED FULTON

Ed Fulton
Minister
EF/RAB/mk

c.c.	H. Pelissero	M.P.P.	- Lincoln
	J. Bradley	M.P.P.	- St. Catharines
	M. Dietsch	M.P.P.	- St. Catharines - Brock
	V. Kerrio	M.P.P.	- Niagara Falls
	M. Swart	M.P.P.	- Welland Thoroid
	R. Haggerty	M.P.P.	- Niagara South

b.c.c. Minister's Office
M.P.P. File
D.G. Hobbs
G.H. Johnston
T.G. Smith
R. Puccini
B. Riddell
Dir. Mun. Transportation Policy/Planning Br.
F. Norman
B. Odgen
J. Sutherns

MAILED
OCT 20 1987
MINISTER'S OFFICE

FOR INFORMATION

REPORT TO: SUSAN REEDER, ACTING SECRETARY
PLANNING AND DEVELOPMENT COMMITTEE

FROM: J. D. THOMS, COMMISSIONER
PLANNING AND DEVELOPMENT DEPARTMENT

DATE: 1988 March 24
COMM FILE:
DEPT. FILE: P5-4-7-9

SUBJECT:

GO Rail Study

RECOMMENDATION

a) That the Planning and Development Department support the recommendations of the Central Area Plan Implementation Committee (CAPIC) regarding the GO Train Expansion Program; and,

b) That the recommendation and the report be referred to the Transport and Environment Committee for consideration.

V J Abraham

V. J. Abraham, M.C.I.P.
Director of Local Planning

J. D. Thoms, M.C.I.P.
Commissioner
Planning and Development Department

FINANCIAL IMPLICATIONS

N/A

BACKGROUND

See CAPIC's GO Rail Study Report.

BJ/dkp

WP 0021P

FOR ACTION

FROM: Central Area Plan Implementation Committee
TO: Planning and Development Committee

DATE: 1988 March 21
File No.: P5-4-7
Attention Of: V. J. Abraham

SUBJECT

GO Rail Study

RECOMMENDATION

a) That the following recommendations be endorsed by the Planning and Development Committee and forwarded to the Transport and Environment Committee for a public meeting prior to a report to Council:

PRINCIPAL RECOMMENDATION

1) That the terminus for GO Rail be relocated at the CP (former T.H. & B.) Station as soon as possible;

OTHER RECOMMENDATIONS

2) That a public meeting be held to solicit comments prior to a City Council decision on this matter;

3) That the decision on the reconstruction of the Hunter Street tunnel be deferred until the growth in service warrants further examination;

4) That the CP station be developed as a multi-modal transport terminus and that the existing bus terminal be transferred to this station;

5) That the opening of the new terminus coincide with any improvement and/or changes to the HSR operations and the transferring of the existing bus terminal;

6) That the maximum GO Train frequency, including two-way service, be provided as soon as the new terminus is open and the operations be integrated with GO bus services;

7) That the Waterdown station be treated as a component of the initial project to provide commuter parking to serve the entire Region;

ANALYSIS

General Comment

An increased GO Rail service to Hamilton is important to the long term future of Hamilton. A rail link will improve transportation connections to Toronto and the east and supplement existing GO bus service and the freeway network. GO trains will be particularly important at rush hour when the freeway system is congested. GO trains will help the community have better access to Toronto and the east, allow those with jobs in the Toronto area to live in Hamilton more easily and create a commuting corridor for those who live along the northern lakeshore and who work in Hamilton. An efficient integrated transportation system will increase the economic potential of the Region, the City, the Central Area, and the downtown.

A GO rail terminus as part of an intermodal facility in the Central Area is in accordance with the city policies and the draft Central Area Plan (Appendix 4).

Location

Proximity of the CP station to the downtown and high density residential areas will provide significantly more convenience for potential users than the CN option.

Cost Effectiveness

Convenient location of the CP station will ensure greater ridership than the CN option and therefore, in the long run will provide a more cost effective service.

Intermodal Connection

The provision of a combined long distance bus terminal/GO Rail service is essential to an integrated transportation system. This can be provided equally well at both locations. However, the proximity of the major local bus movements (east, west along King and Main and mountain access on James and John) allows a good interconnection with the CP station. The VIA service, however, would be separate and a CP option would not jeopardize the expansion of this service. The CN station would require a special shuttle service to connect it with the downtown.

Economic Development

Development of the terminus and surrounding area has greater potential at the CP station because of its proximity to the downtown and all its support services. Improved transportation links would make investment in the downtown and Region, as a whole, more attractive. A terminus at the CP station would provide an impetus for development to the east of James Street.

Parking

The CN Station has limited scope for commuter car parking particularly when the land required for the Perimeter Road is removed. At the CP station there is even less scope. However, all day commuter parking at no charge or low rates, particularly at the CP Stations, is unrealistic and not desirable since it will use space which is at a premium for other purposes and add to the congestion in the downtown and nearby neighbourhoods. The Waterdown Station should be designed to provide adequate commuter parking as soon as the rail terminus is opened and for future expansion.

Cost

The CP option is $32 million more than the CN option. However, if the CP option excludes the double tracking and tunnel reconstruction in the vicinity of Queen Street, the two alternatives are comparative in cost; the CP option would be $8 million less costly. The Province is expected to fund the total cost of the extension of GO Train service.

Neighbourhood Impacts

The CN route right-of-way has little neighbourhood impact. The CP route has impacts on neighbourhood uses between Dundurn and Queen and Park and the CP Station. Impacts will also be felt east of the CP Station where trains are stored before being brought into service. Mitigating measures, possibly enclosing sections of railway are required to reduce noise, vibration and fumes. To this end, public participation should be provided in developing these measures.

Urban Design

The development of the CP Station presents interesting urban design opportunities and the potential for using and linking underused space at various levels. The CP Station, which is categorised as a landmark building by LACAC, would be provided with a new lease of life to ensure its preservation. There is a need to provide guidelines for new development surrounding the station to ensure development is properly integrated with the neighbourhood. The CN Station is also a landmark building and should be maintained as the VIA Station.

CONCLUSION

CAPIC has concluded that the most appropriate location for the terminus is the CP station and that as full a service as possible should be provided as soon as possible.

However, there is concern about the cost and impact of double tracking and Hunter tunnel reconstruction. Service should, therefore, be provided without reconstruction of the tunnel and a further decision made as the service develops. It is anticipated that the capacity of the Hunter Street tunnel will be satisfactory for a long time period and that options to the reconstruction of the tunnel, (e.g. supplementing service with the CN Station) could be considered as service approaches up to the maximum the existing tunnel allows, (i.e., approximately twenty passenger trains, which includes trains to and from Hamilton). It is felt to be impractical to provide full service (such as between Oakville and Toronto) for the foreseeable future because of the anticipated demand for service.

The Neighbourhood Associations and others interested should be involved, from the outset with the Province, in developing mitigating and enhancement measures to ensure a socially and environmentally sensitive option. The Urban Design Committee should be asked to review the proposed development and to prepare guidelines for surrounding development.

ADDENDUM

A majority of CAPIC members support the recommendations as presented. However, a number of members either opposed the recommendations or abstained from voting. Those opposing the recommencations favour the CN Station with the information that is now available. They see the advantages of the CN Station as being of long term economic benefit in terms of location within the City. They also see the CN Station being appropriate for extension of service to the Niagara Peninsula. Those abstaining either favour the CP station or are neutral on the choice of terminus.

The general concern of CAPIC members as a whole is that there is not enough economic or social impact information available or information about general feelings of the public, for final recommendations. For this reason CAPIC has recommended continued review as new information becomes available.

DG/dkp/CS

CHESLEY K. EARLE, P.ENG., GENERAL MANAGER
TELEPHONE (416) 522-6611

T. W. WOODHOUSE, P.ENG.
ASSISTANT GENERAL MANAGER
W. A. THOMAS, P.ENG.
CHIEF ENGINEER
W. C. COOPER, RIA
SECRETARY-TREASURER

HAMILTON HYDRO-ELECTRIC SYSTEM

55 JOHN STREET NORTH, HAMILTON, ONT. L8N 3E4

February 11, 1988

The Ministry of Transportation
and Communications
Toronto Area Co-ordinating Office
1201 Wilson Avenue
Downsview, Ontario
M3M 1J8

Attention: Mr. Brian Ogden
Project Manager

Dear Sir:

Re: GO Train Service Expansion Program
Burlington to Hamilton Study

We acknowledge your letter of January 28, 1988 with preliminary recommendations for this study. Hamilton Hydro does not see any major problems with the proposed CP/TH&B route proposed.

Although we have several high voltage underground crossings in the Hunter Street Tunnel area which might be affected if the tunnel is modified, we do not foresee major technical difficulties in relocating this plant if necessary.

Yours truly,

W.A. Thomas, P. Eng.
Chief Engineer

DRM/nc

HALTON REGION
CONSERVATION AUTHORITY
P.O. Box 1097, Station B, 2596 Britannia Road, West
Burlington, Ontario L7P 3S9 (416) 336-1158

May 10, 1988.

Mr. Brian Ogden
Toronto Area Coordinating Office
Policy Planning Branch
Ministry of Transportation
3rd Floor, West Tower
1201 Wilson Avenue
Downsview, Ontario
M3M 1J8

Dear Sir:

Re: GO Train Service Expansion Program
Burlington to Hamilton Study
File No.: PPR-11

Further to our walk of the railway embankment between Snake Road and the C.P.R. cut-off, I wish to advise the following.

Within the Authority's watershed, that is the area between Snake Road and the pedestrian bridge at the Royal Botanical Garden spring gardens, the expansion of the rail line to the north would appear to cause less disruption to the several tributaries of the Grindstone Creek crossing the area than an expansion to the south. This may or may not complicate the preferred alignment for the track to the east and west with respect to environmental impacts. The ravines which will be affected in the aforementioned area, while well defined, are not of such significance as to preclude their disruption if it is considered better to locate the new track to the south of the existing line when considering all environmental impacts.

With respect to the Waterdown station area, Authority staff remind you that at the time of the GO ALRT review it was established that the creek should be maintained in an open channel state to the greatest extent possible. Present Authority policy requires flood depths under Regional Storm conditions should be kept to a minimum of 0.43 metres for day time parking.

Finally, we look forward to reviewing in detail the requirements for the crossing of the Grindstone Creek when you are in a position to present those to our staff.

I trust this information is of assistance.

Yours truly,

John D. Hall

John D. Hall, Manager
Resource Planning.

JDH:mrl
ccs: Mr. Peter Rice, Royal Botanical Gardens, P.O. Box 399, Hamilton L8N 3H8
Mr. John Coates, Hamilton Region Conservation Authority, P.O. Box 7099, 838 Mineral Springs Road, Ancaster L9G 3L3
Mr. J. S. Sutherns, McCormick, Rankin, 60 Briarwood Avenue, Mississauga L5G 3N6

The Hamilton Street Railway Company • 18 Wentworth Street North • Hamilton, Ont. L8L 5V1 • 527 4441

We're Going your Way

ITEM 6

June 28, 1988

REPORT TRA 88-066

To The Chairman and Members of the
Transportation Services Committee

Re: GO-Train Service Expansion into Hamilton

Origin:

At your meeting of May 10th, 1988, we presented a progress report on the final phases of this study. Specifically we advised that the third round of public meetings was about to start and a final recommendation was to be formulated.

Analysis:

Attached is the summary report from the consultant on the third round of public involvement. On page 5 the comments can be summarized as follows:

- Elected members of Council (Burlington, Halton, Hamilton), with the exception of the City of Stoney Creek, generally supported the final technical recommendations along with a desire for speedy action.
- The public at large overwhelmingly supported the selection of the TH&B station as the downtown terminus and generally accepted the recommendation to increase service to meet demand.

City of Hamilton:

Since the City of Hamilton is the principle City affected by this service, we felt it prudent to await the City's resolution on this matter. Their resolution, as approved by City Council on Tuesday, June 28, 1988 is attached. You will note that they also approve of the TH&B station.

continued...

In view of the above and since a significant amount of material has already been presented to your Committee, I will go directly to our recommendations. The Consultant will be available at the Committee meeting.

Recommendations:

1. That the GO-Train services into Hamilton be realigned onto the TH&B/CP rail line with a downtown station at the former TH&B passenger terminal.
2. That the realignment be done as soon as practical and that service enhancements be optimized taking into account ridership demand and incremental costs.
3. That the new station be developed in its ultimate multi-modal configuration from the start, including the relocation of all transit functions now taking place at the Rebecca Street GO Bus Station.
4. That concurrent with this service and alignment commitment and development, the Province also commit to the development of a new suburban station at Waterdown Road in Burlington.
5. That the Province be requested to expedite approvals necessary for this undertaking and commit funds for the expeditious construction of the works necessary to implement this undertaking.
6. That the Regional Municipality of Hamilton-Wentworth fully supports the Ministry of Transportation for Ontario and GO-Transit in seeking approvals for this undertaking.

Respectfully submitted,

H. O. Schweinbenz
Commissioner of Transportation

HOS/db

Ministry of Natural Resources
Ministère des Richesses naturelles
Ontario

P.O. Box 2186
Cambridge, Ontario
N3C 2W1

8564.2.3

May 20, 1988

Ministry of Transportation
Toronto Area Co-ordinating Office
3rd Floor, West Tower
1201 Wilson Avenue
Downsview, Ontario
M3M 1J8

Attention: B. Ogden, Project Manager

Dear Mr. Ogden:

SUBJECT: Go Train Service Expansion Program
Burlington to Hamilton Study

Cambridge District staff have now had an opportunity to review the detailed route location for the above project as provided by McCormick, Rankin and Associates. Please consider the following comments.

I have attached copies of our resource information for the study area. Please note the following specific interests.

Wetland 79-1 Grindstone Creek . community vegetation information has been attached for this Class 2, Provincially Significant wetland. Wetland area should be avoided in considering new track locations.

Grindstone Creek .supports migratory runs of salmon and trout in the spring and fall. Any construction at crossing should be undertaken between June 1 and August 31 with appropriate erosion and sedimentation controls applied.

Other stream crossings should employ erosion and sedimentation control measures. Although fisheries concerns in these other crossings are not major, the same timing restriction is preferred but not essential.

Coote's Paradise .this area is designated as a provincially significant Area of Natural and Scientific Interest and a Class I, provincially significant wetland. From the information provided there do not appear to be any impacts in this area.

...2

I would ask that Ministry resource interests be addressed through your study. Please give us an opportunity to review any reports and keep us advised of the progress of your study.

Questions concerning these comments should be directed to Ted Harvey at this office.

Yours truly,

J. J. McFadden
District Manager
Cambridge District

Telephone: (519) 658-9355
Hamilton: (416) 526-8565
Enclosures

EH/gmb
cc: S. Schigns, McCormick, Rankin and Associates

GRINDSTONE CREEK

WETLAND 79-1
SIZE: 23.0 ha
CLASS: 7

Vegetation Community Description

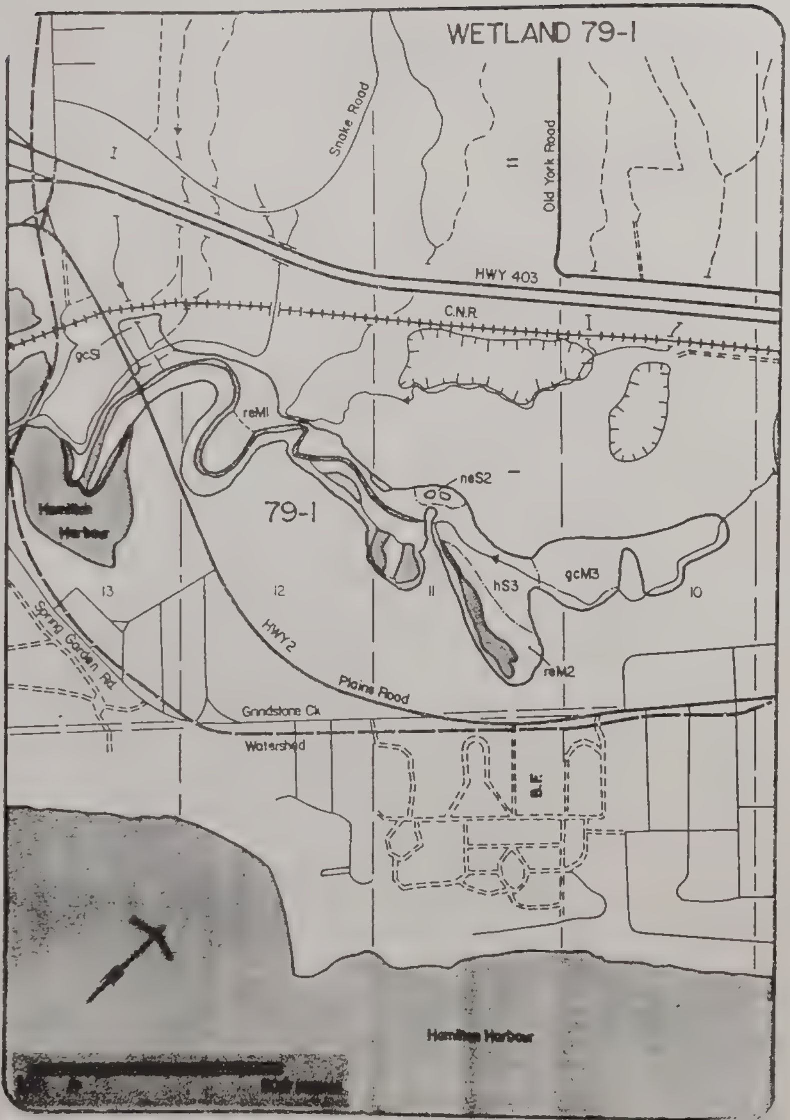
Marsh

M1	*re common cattail narrow-leaved cattail	ne reed canary grass manna grass species	gc boneset purple loosestrife
M2	*re common cattail	su coontail waterweed	
M3	*gc joe-pye weed pale jewelweed pink jewelweed	ne reed canary grass	

Swamp

S1	*gc purple loosestrife	h willow species ash species
S2	*ne manna grass species	h willow species
S3	*h willow species	gc jewelweed grasses joe-pye weed boneset blue vervain pale jewelweed pink jewelweed

* denotes dominant vegetation form



Appendix N

Council Resolutions of Approval

BIBLIOGRAPHY

Innumerable published and unpublished documents, texts, reports, studies, and standards were referred to in carrying out the Study and preparing the Environmental Assessment Report. Only the most relevant and significant are listed in this Bibliography, and are separated for ease of reference into three lists. Studies carried out under the control of the proponent as part of the current study are listed in Table B1. Table B2 lists those studies concerning the previous GO-ALRT project in the Study Area.

Numerous other GO-ALRT reports are available but were not referred to during this project and hence are not listed. A variety of other documents were provided by GO Transit and the local municipalities for reference during the study, and are listed in Table B3.

A copy of each report is held at the head office of GO Transit, 1120 Finch Avenue West, Downsview, Ontario M3J 3J8.

TABLE B1: STUDIES CARRIED OUT UNDER THE CONTROL OF THE PROPONENT

	REPORT	AUTHOR	DATE
1.	GO Transit Lakeshore Service Expansion Plan Issue 1A Interim Service Improvements West of Oakville.	Canadian National Railways	March 4, 1986
2.	GO Transit Lakeshore Service Expansion Study Issue 5 Hamilton Project; Indication of Mainline Requirements	Canadian National Railways	July 31, 1986
3.	(Twenty Train Scenario Report)	Canadian National Railways	(September),1988
4.	Study to Identify the Rail Plant Improvements in order to provide GO Rail Commuter Service Extensions to Oshawa and Hamilton utilizing Segements of CP Right-of-Way.	CP Rail	December, 1986
5.	Report on Intermediate Level of GO Transit Rail Commuter Service between Hamilton junction and Hunter Street station.	CP Rail - East	April, 1988
6.	Study Organization, Study Process and Study Involvement	McCormick Rankin	May, 1987
7.	Overview Report	McCormick Rankin	June, 1987
8.	Report on First Round of Public Involvement	McCormick Rankin	June, 1987
9.	Report on Second Round of Public Involvement	McCormick Rankin	November, 1987
10.	Report on Third Round of Public Involvement	McCormick Rankin	June, 1988
11.	Economic Development Assessment	Cresap/Barnard	November, 1987
12.	Plant Requirements	Morrison Hershfield	October 23, 1987
13.	Hunter Street Tunnel	Morrison Hershfield	October [illegible]
14.	Natural Environment Assessment	Ecoplans	September 1988

TABLE B2: GO-ALRT PROGRAM REPORTS

	REPORT	AUTHOR	DATE
1.	Hamilton Project Study Design	Giffels	March, 1983
2.	Burlington Project Forecast of Parking Requirements for Burlington Go ALRT Stations (working paper)	Fenco	April, 1983
3.	Burlington Project Evaluation Criteria (discussion paper)	Fenco	May, 1983
4.	Burlington Project Public Information Centre No. 1	Fenco	June, 1983
5.	Burlington Project Status Report on Structures	Fenco	October, 1983
6.	Burlington Project Public Information Centre No. 2	Fenco	November, 1983
7.	Burlington Project Grade Separation of GO-ALRT at King Road/ CN Rail (working paper)	Fenco	No date
8.	Hamilton Project Information Package Evaluation Stage	Giffels	December, 1983
9.	West Section Station Development Strategy	M.M. Ross	December, 1983
10.	Go-ALRT Ridership Demand Forecasts	MTC Transportation Demand Forecasting Office	January, 1984
11.	Hamilton Project - Technical Summary Report Evaluation Stage	Giffels	February, 1984
12.	Hamilton Project Recommendation Report for Route Selection	Giffels	March, 1984
13.	Hamilton Project Information Report Related to Public Issues and Concerns.	Giffels	May, 1984
14.	Oshawa Project Noise and Vibration Addendum to EA Report	M.M. Dillon	June, 1984
15.	Hamilton Project Report S11.0 Man-Made Heritage	Meek Klausen Servage Walker/ Giffels	May, 1984
16.	Hamilton Project Report E1.0 Route Segments	Giffels	June, 1984
17.	Hamilton Project Report S1.0 - S9.0 Social Environment	Giffels	June, 1984
18.	Burlington Project Preliminary Design Report	Fenco	August, 1984
19.	Burlington Project Environmental Status Statement	Fenco	August, 1984
20.	Hamilton Project Reports S14.0, S14.1 Archaeology	Landplan/Giffels	February, 1985
21.	Hamilton Project Report N3.0 Water, Biota, and Sediments	Landplan/Giffels	February, 1985
22.	Hamilton Project Report S12.0 Visual Characteristics	Landplan/Giffels	March, 1985
23.	West Section Station Parking Strategy	M.M. Ross	March, 1985
24.	Hamilton Project Report S13.0 Environmental Noise and Vibration Analysis	Valcoustics Canada/Giffels	June, 1985
25.	Hamilton Project Report N1.0 Vegetation	Landplan/Giffels	July, 1985
26.	Hamilton Project Report N2.0 Wildlife	Landplan/Giffels	July, 1985
27.	Hamilton Project Report N4.0 Fisheries	Landplan/Giffels	July, 1985
28.	Hamilton Project N5.0 Geology, Physiography and Soils	Landplan/Giffels	July, 1985
29.	Hamilton Project Report S10.0 External Involvement	Giffels	August, 1985
30.	Hamilton Project Status Report	Giffels	October, 1985

TABLE B3: OTHER REPORTS

	REPORT	AUTHOR	DATE
1.	1983 GO Train Passenger Survey Results	GO Transit	November, 1984
2.	19185 GO Bus Passenger Survey Results	GO Transit	January, 1986
3.	Detailed ridership figures for Hamilton services	GO Transit	Various
4.	Lakeshore Ridership Projections	GO Transit	February, 1987
5.	Lakeshore GO Rail Line Extensions Ridership Demand Forecasts for 1991, 2001, and 2011	MTC Transportation Demand Research Office	May, 1987
6.	General Information on the Assessment of Noise and Vibration from the proposed GO Transit Expansion.	Hatch	August, 1986
7.	Review of Methods available for mitigating Noise and Vibration Impacts from the proposed Go Transit Expansion	Hatch	August, 1986
8.	Noise Impact - GO Transit System Pickering to Whitby	S.S. Wilson	September 15/86
9.	Building on Strength - Realizing Opportunity (An Economic Strategy for Hamilton-Wentworth).	Region of Hamilton-Wentworth	June, 1986
10.	Official Plan	Region of Hamilton-Wentworth	June, 1982
11.	Rapid Transit Project Draft Environmental Assessment	Metro Canada	October, 1981
12.	Hamilton Perimeter Road Phase I - Transportation Planning Investigations	M.M. Dillon	September 28/87
13.	Greater Hamilton Population Trends - Demographics Report	Region of Hamilton - Wentworth	June, 1987
14.	Official Plan	Region of Halton	December, 1982
15.	Official Plan	City of Hamilton	September 30/86
16.	Hamilton Waterfront Master Plan	Coombes/Kirkland Berridge/City of Hamilton	September, 1985
17.	Central Area Plan	Central Area Plan Implementation Committee/Region of Hamilton-Wentworth	January, 1981
18.	Central Area Plan Update (draft)	Central Area Plan Implementation Committee/Regional of Hamilton-Wentworth	July, 1986
19.	GO-ALRT Option for Hamilton	Region of Hamilton-Wentworth	May, 1984
20.	Official Plan Amendment No. 49 Office Consolidation	City of Burlington	April, 1986

The Corporation of the
City of Burlington

City Hall:
426 Brant Street, Burlington, Ontario, Canada
Mailing Address
P.O Box 5013, Burlington, Ontario, Canada L7R 3Z6

Telephone: 335-7697
File No.: 770-04

September 13, 1988

RECEIVED
MINISTER'S OFFICE
SEP 21 1988
Ministry of Transportation

Honourable Ed Fulton
Minister of Transportation
Ferguson Block, 3rd Floor
77 Wellesley Street West
Toronto, Ontario
M7A 1Z8

Dear Mr. Fulton:

SUBJECT: GO Transit Expansion - Burlington to Hamilton

The Council of the Corporation of the City of Burlington at its regular meeting held on Monday, September 12, 1988 enacted the following resolution being Item No. PW-305-88:

> THAT the Minister of Transportation of Ontario be informed that the City of Burlington supports the recommended expansion of GO Transit from Burlington to Hamilton utilizing the Hunter Street tunnel in Hamilton and the former TH & B railway station;
>
> and that this support is subject to the Ministry of Transportation of Ontario carrying out required noise studies along the CN Line in the Aldershot Area to determine the impact of the significant changes that are being made to the Aldershot rail shunting yard;
>
> and that noise attenuation measures be taken as required;
>
> and that the City of Burlington supports the early construction of the Waterdown Road GO Transit Station in conjunction with expansion of GO Transit from Burlington to Hamilton;
>
> and that the City supports the investigation in the extension of full GO Rail from the Burlington Fairview Street Station to the Waterdown Road Station.

Please accept this resolution as the City of Burlington's formal position with respect to the GO Transit expansion to Hamilton.

A copy of Public Works Report PW-241/88 dated August 25, 1988 regarding this matter is attached for your information.

Yours truly,

HMacRae
Helen MacRae
CITY CLERK AND DIRECTOR OF
ADMINISTRATIVE SERVICES

HM/lw
207-10

PW-305-88

CITY OF BURLINGTON
PUBLIC WORKS DEPARTMENT

REPORT PW 241/88 August 25, 1988

Chairman and Members of the
Public Works Committee

Re: GO Transit Expansion - Burlington to Hamilton

RECOMMENDATION:

THAT the Minister of Transportation of Ontario be informed that the City of Burlington supports the recommended expansion of GO Transit from Burlington to Hamilton utilizing the Hunter Street tunnel in Hamilton and the former TH & B railway station;

and that this support is subject to the Ministry of Transportation of Ontario carrying out required noise studies along the CN Line in the Aldershot Area to determine the impact of the significant changes that are being made to the Aldershot rail shunting yard;

and that noise attenuation measures be taken as required;

and that the City of Burlington supports the early construction of the Waterdown Road GO Transit Station in conjunction with expansion of GO Transit from Burlington to Hamilton;

and that the City supports the investigation in the extension of full GO Rail from the Burlington Fairview Street Station to the Waterdown Road Station.

REPORT

The Committee is aware of the recommended plan to extend GO Transit service from Burlington to Hamilton via the Hunter Street tunnel to the former TH&B station. The Ministry of Transportation of Ontario have asked for Council's support for that recommendation through the environmental assessment process. The purpose of this report is to present a suggested resolution to be passed on to the Minister of Transportation. The Committee has asked staff for some additional information and clarification on several issues which is presented as follows:

1. Environmental Iss

There was a concern expressed about the impact that any track construction might have through the Royal Botanical Gardens and around the Bay.

The Ministry and their consultant,McCormick Rankin Ltd., have been working closely with representatives of the Royal Botanical Gardens, the Halton Region Conservation Authority with regard to environmental issues. Specific answers and detail surrounding environmental issues cannot be addressed and resolved until the detailed design of any facilities has been completed. Staff however, are confident that both the Ministry of Transportation and GO Transit in their detailed design work will maintain the ongoing relationship with the RBG and the Halton Region Conservation Authority in order to mitigate any environmental concerns. City staff will however, be meeting with GO Transit and other agencies as required throughout the detailed design stage.

PW-305-88

2. Aldershot Shunting Yard

Staff have met with CN and GO Transit regarding the Aldershot Shunting Yard. Attached is a schematic showing the number and location of tracks that CN intend to add to the Aldershot Yard. The requirement for this additional track is brought about by the expansion of GO Transit service between Oakville and Burlington and is not directly related to the expansion of services from Burlington to Hamilton. At the present time, in the section from Oakville to Burlington there is a third track at various locations which is used for train storage, shunting, etc. The implementation of full GO service from Oakville to Burlington will require that this third track be used as a main line track for GO Transit. This being the case, there will be no place available between Oakville and Burlington for the shunting and storage activities that take place at that location at the present time. It is proposed by CN that all of these activities be relocated to the Aldershot Yard and hence the requirement for the additional trackage.

As shown in the schematic diagram, there will be an additional track crossing King Road at the at grade railway crossing. That track will be approximately 28 feet north of the existing north track. The track that will be crossing King Road is a track that is going to be used by trains entering the Aldershot yard and will not necessarily be used as a storage or shunting track in itself.

Staff brought to CN's attention, Burlington's concern regarding noise in the area. It is CN's belief that the noise levels are caused mainly by the through freight trains in the area and are not changed significantly by additional storage and shunting of trains at the Aldershot Yard. CN will, however, be carrying out noise studies in conjunction with their expansion work at the Aldershot Yard. We feel that it is in the City's best interests to ensure that these studies are completed and also to ensure that if any noise attenuation measures are required that they be proceeded with as well. While the work at the Aldershot Yard is being caused by the expansion of GO Transit from Oakville to Burlington, we feel that the City should mention their concerns at this time as part of their response on the expansion of GO Transit Service from Burlington to Hamilton.

CN have indicated that the expansion of GO Transit Service from Burlington to Hamilton will not impact the expanded Aldershot Yard.

3. King Road At Grade Crossing

The Committee discussed the requirement for a grade separation at King Road. The issue was whether the expansion of GO Transit Service in the area would require that King Road be grade separated.

In discussions with CN and GO Transit, it is clear that they do not see a need for a grade separation being required as a result of GO Transit expansion. GO Transit have pointed out many locations along GO Train lines, where there at grade crossings with train and vehicle traffic in excess of those that occur at King Road. Given this fact, it is unlikely that Burlington would be able to compel GO Transit to provide a grade separation at King Road.

Staff were asked to gather some statistics with respect to the King Road crossing. At the present time, there are approximately 27 - 30 through trains per day crossing King Road. There are approximately 15 - 18 CN freight trains operating at 60 kph, 6 GO Transit trains at 80 kph and 6 Via trains at 80 kph. Staff have observed in addition to these through trains, some shunting and moving of trains across the King Road crossing at various times of the day.

In the time that we have viewed the crossing, we had noticed that the gates have been in the down position from anywhere from 10 seconds to 15 minutes on one particular occasion.

In checking with CN, they indicate that the Railway Act states that a standing train (stationery) can block a level road crossing for a maximum of five minutes. There is no limit, however, for moving trains and there is no limit to a situation where there would be one train in one direction followed immediately by another train in the opposite direction. This is the reason why from time to time road closures at the track can last for extended periods of time.

While it is true that the expansion of service into Hamilton would add 10 more through trains, this again does not significantly change the status of the King Road at grade crossing.

4. Waterdown Road Station

The City of Burlington supports the construction of a Waterdown Road GO Transit Station early in the project of the extension of GO Rail Service from Burlington to Hamilton. The City also supports the idea of considering the possibility of expanding full GO Rail Service from the Fairview Street Burlington Station to the Waterown Road Station. The benefit of this to Burlington is that the "rail head" becomes Waterdown Road and therefore vehicles coming from Hamilton, Ancaster, Waterdown, etc., would park at the Waterdown Road Station relieving congestion at the Fairview Street Station.

5. Waterdown Road Interchange

While the City of Burlington are on record as supporting a full interchange at Waterdown Road, staff agree with the Ministry of Transportation that the expansion of GO Transit service from Burlington to Hamilton does not in itself require this interchange.

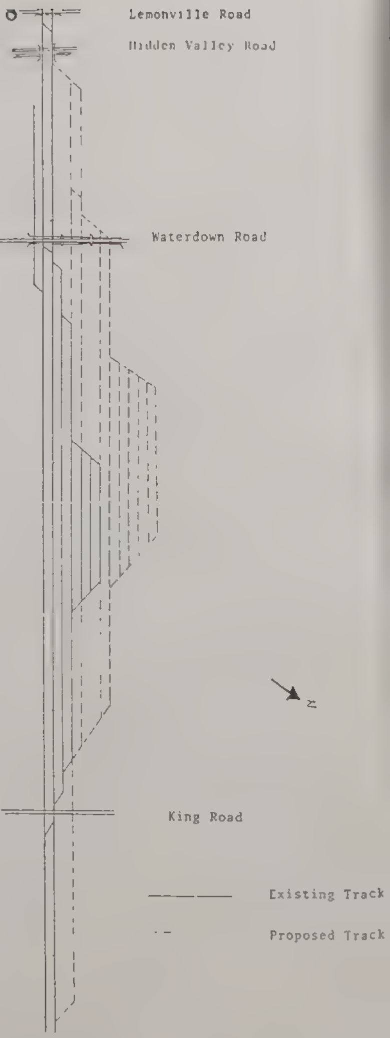
The majority of people using a GO Station at Waterdown Road will be travelling to and from the Hamilton area and can be accommodated by the ramps that are provided at the present time.

The development of a full interchange at Waterdown Road has a certain number of environmental issues that would complicate the matter of the construction of a Waterdown Road station at this time. This being the case, it is staff's opinion that Burlington should continue to support and encourage the Ministry to consider a full interchange at Waterdown Road, however, this should not be directly tied to the expansion of GO Transit service from Burlington to Hamilton.

Respectfully submitted,

M. Koevoets, P. Eng.,
Director of Public Works

APPROVED BY
CAO &
MANAGEMENT COMMITTEE
Date



PROPOSED EXPANSION
ALDERSHOT YARD

THE REGIONAL MUNICIPALITY OF HALTON

Legal Services Department
Clerk's Division

P O BOX 7000
1151 BRONTE ROAD
OAKVILLE ONTARIO L6J 6E1
416/827-2151

September 22, 1988

Mr. Brian Ogden
Project Director
Ministry of Transportation
1201 Wilson Avenue
Downsview, Ontario
M3M 1J8

Dear Mr. Ogden:

Re: GO Train Service Expansion Program Burlington to Hamilton Study, Response by the Region of Halton to Final Technical Recommendations Approved by the GO Transit Board

This letter is to certify that the Council of the Regional Municipality of Halton at its meeting held Wednesday, September 21 1988 passed the following recommendation on the above noted subject:

1. THAT the Results of the Third Round of Public Involvement, GO Train Service Expansion Program, Burlington to Hamilton Study, as summarized in Schedule A to Report DPD 93/88, be received for information.

2. THAT the Ministry of Transportation and GO Transit be advised that the Regional Municipality of Halton supports the Final Technical Recommendations of the GO Train Service Expansion Program, Burlington to Hamilton Study, as approved by the GO Transit Board on 88 04 08, and as presented in Schedule B to report DPD 93/88.

BURLINGTON 639 4540
HALTON HILLS ACTON 853 0501
HALTON HILLS GEORGETOWN 878 8113
MILTON 878 8113
OAKVILLE 827-2151

3. THAT the Ministry of Transportation and GO Transit Board be advised that the Council of the Regional Municipality of Halton supports the earliest possible introduction of expanded GO Train Service to Hamilton in accordance with the Recommendations approved by the GO Transit Board on 88 04 08.

4. THAT the Ministry of Transportation and GO Transit be requested to proceed with the early development of the Waterdown Road GO Station, to coincide with the shift of existing GO Train Service to Hamilton from the CN Rail Oakville Subdivision to the CP Rail Toronto Connection and Waterford Subdivision.

5. THAT GO Transit be requested to continue all efforts to secure additional property at the Burlington Fairview Street GO Station and to proceed with expansion of parking and improvements to access arrangements, to alleviate existing congestion problems as quickly as possible.

6. THAT GO Transit be requested to provide the Region of Halton and City of Burlington with the results of the investigations by CN Rail, of the feasibility of full GO Train Service to the proposed Waterdown Road GO Station and be advised that upon receipt and review of these results Halton will respond to the issue of "full" GO Train Service to the proposed Waterdown Road GO Station, to the GO Transit Board.

7. THAT a copy of Report DPD 93/88, GO Train Service Expansion Program Burlington to Hamilton Study, Response by the Region of Halton, be forwarded to the City of Burlington, City of Hamilton and the Regional Municipality of Hamilton-Wentworth for information.

8. THAT support of the proposal for the Go Train Service Expansion - Burlington to Hamilton be conditional upon M.T.O. carrying out the required noise studies along the CN Line in the Aldershot Area and further that noise attenuation measures be taken as required.

Enclosed for your information is a copy of the Staff Report DPD 93/88 which prompted the above.

Should you require any additional information please do not hesitate to contact Mr. R. Mohammed, Commissioner of Planning and Development.

Yours truly

DVarley

David J. Varley
Regional Clerk

DJV/PC/agr
Encls.
cc: Mr. Ducharme, Director, Engineering & Development, Ministry of Transportation.
cc: Mr. R. Mohammed, Commissioner of Planning and Development

REGIONAL MUNICIPALITY OF HALTON

Report To Chairman and Members of the Planning and Public Works Committee

From R. Mohammed, Commissioner of Planning and Development

Date 88 08 29

Report No. DPD 93/88

Re: GO Train Service Expansion Program Burlington to Hamilton Study, Response by the Region of Halton to Final Technical Recommendations Approved by the GO Transit Board

RECOMMENDATIONS

1. THAT the Results of the Third Round of Public Involvement, GO Train Service Expansion Program, Burlington to Hamilton Study, as summarized in Schedule A to Report DPD 93/88, be received for information.

2. THAT the Ministry of Transportation and GO Transit be advised that the Regional Municipality of Halton supports the Final Technical Recommendations of the GO Train Service Expansion Program, Burlington to Hamilton Study, as approved by the GO Transit Board on 88 04 08, and as presented in Schedule B to report DPD 93/88.

3. THAT the Ministry of Transportation and GO Transit Board be advised that the Council of the Regional Municipality of Halton supports the earliest possible introduction of expanded GO Train Service to Hamilton in accordance with the Recommendations approved by the GO Transit Board on 88 04 08.

4. THAT the Ministry of Transportation and GO Transit be requested to proceed with the early development of the Waterdown Road GO Station, to coincide with the shift of existing GO Train Service to Hamilton from the CN Rail Oakville Subdivision to the CP Rail Toronto Connection and Waterford Subdivision.

5. THAT GO Transit be requested to continue all efforts to secure additional property at the Burlington Fairview Street GO Station and to proceed with expansion of parking and improvements to access arrangements, to alleviate existing congestion problems as quickly as possible.

6. THAT GO Transit be requested to provide the Region of Halton and City of Burlington with the results of the investigations by CN Rail, of the feasibility of full GO Train Service to the proposed Waterdown Road GO Station and be advised that upon receipt and review of these results Halton will respond to the issue of "full" GO Train Service to the proposed Waterdown Road GO Station, to the GO Transit Board.

7. THAT a copy of Report DPD 93/88, GO Train Service Expansion Program Burlington to Hamilton Study, Response by the Region of Halton, be forwarded to the City of Burlington, City of Hamilton and the Regional Municipality of Hamilton-Wentworth for information.

EXECUTIVE SUMMARY

The purpose of this report is for Council to formally respond to the Technical Recommendations approved by the GO Transit Board on 88 04 08, pertaining to the results of the GO Train Service Expansion Program, Burlington to Hamilton Study.

These Technical Recommendations were originally presented to Council on 88 05 18, at which time Council reserved a formal position to the Ministry of Transportation and GO Transit until the third and final round of Public Meetings for this study were held. These Public Meetings were held in early June and the results indicate a strong level of support for expanded GO Train Service to Burlington/Hamilton and for the proposed Waterdown Road GO Station. However, some concerns expressed included increasing rail noise in Aldershot and the need for a grade separation at King Road.

At this time, staff are recommending that Council support the recommendations approved by the GO Transit Board on 88 04 08, early development of both the expanded GO Train Service to Hamilton and the future Waterdown Road GO Station. In addition, support for the resolution of on-going property acquisition at the Fairview Street GO Station as a means to solving current congestion problems are put forth. Finally, staff are recommending that Council not take a position on the issue of the extension of full GO Train Service to the proposed Waterdown Road GO Station until such time as the results of an investigation by CN Rail are known, reviewed by staff and reported to Council.

REPORT

Background

Over the past two years staff of the Planning and Development Department have participated as members of the Project Steering Group for the GO Train Service Expansion Program, Burlington to Hamilton Study. During this time period, staff have reported to Council on a number of occasions, the results of the various technical studies undertaken by the Ministry of Transportation and GO Transit as part of this project, including the results of the public consultations.

On 88 05 18 the final Technical Recommendations, approved by the GO Transit Board on 88 04 08 (Schedule B), were presented to Council (DPD 53/88) at which time the Ministry and GO Transit were advised that a formal response to these Technical Recommendations would be forthcoming, following the final round of public consultation on this project. In addition, staff indicated that it would be beneficial to receive the results of a separate investigation of "full" GO Train Service to the proposed Waterdown Road GO Station, a study which was initiated by the GO Transit Board on 88 04 08. Staff also indicated, in that report, that discussions with

Hamilton-Wentworth staff would be held to determine if a common position could be developed regarding the extension of expanded service to Burlington and Hamilton.

Results of the Public Consultation June 1988

A report entitled GO Train Service Expansion Program, Burlington to Hamilton Study, Summary Report on Third Round of Public Involvement has been placed in the Councillors' Lounge for information. An Executive Summary from this report is attached to this staff report as Schedule A. For the purposes of the Third Round of Public Meetings, three public information centers were held between 88 05 31 and 88 06 02, two in Hamilton and one in Burlington at the Fairview Public School in Aldershot.

Approximately 50 individuals signed the attendance register at the Burlington meeting, and a total of 20 comment sheets were returned. In summary, concerns were expressed regarding the need for a grade separation at King Road and increasing noise levels and the need for noise barriers in the Enfield Road Area. Responses, while certainly not statistically valid, indicated unanimous support for the Waterdown Road GO Station including full service.

Halton's Response to the GO Transit Board

The following presents the rationale and basis for each of the recommendations contained in this staff report. Recommendation No. 1 refers to receipt of the results of the last round of public meetings.

Recommendation No. 2

Halton Planning and Development staff recommend that Council endorse the Final Study Recommendations as presented in Schedule B to this report. Firstly, to implement "Full" Go Train Service between the Fairview Street Go Station in Burlington and the Hamilton (TH & B) Station will require a full Environmental Assessment. This Environmental Assessment will include the expansion of service, and necessary trackage improvements, construction of the proposed Waterdown Road GO Station and improvements to the south side of the Waterdown Road/Highway 403 interchange for access to the proposed station. The development of the Waterdown Road GO Station will not require any improvements to the north side of this interchange, including the westbound off-ramp in the vicinity of the Sassafras Woods (ESA No. 4). These later improvements would be a function of a separate Environmental Assessment, including justification of need.

Expansion of full GO Train Service between the Oakville (Trafalgar Road) GO Station and the Fairview Street GO Station and associated station improvements are exempt from the Environmental Assessment process. The level of service to Hamilton west of the Fairview Street Station will be increased incrementally up to a level (not full service) as constrained by the existing Hunter Street Tunnel. In no way does this recommendation limit the possibility of the extension and termination of full service to a GO Station at Waterdown Road. Further, Full GO Train Service between the Oakville Trafalgar Road Station and the Burlington Fairview Street Station is not constrained by the capacity of the Hunter Street Tunnel in Hamilton.

In report DPD 53/88, staff indicated that it would be beneficial if the results of the investigation into the feasibility of the extension of full GO Train Service to Waterdown Road, as directed by the GO Transit Board on 88 04 08 were available as input to the preparation of a final report to Council on this matter.

Schedule C to this report is correspondence from GO Transit, which indicates this investigation will not be completed until the New Year. At this time staff have no problem with endorsing the recommendations of the GO Transit Board, and are not concerned that this will limit in any way or form Council's ability to pursue the extension of full service to the Waterdown Road GO Station at a later date. However, Council should be aware that the extension of full GO Train Service to the future Waterdown Road GO Station will require and be subject to a separate Environmental Assessment.

Recommendation No. 3

Staff are requesting that Council endorse a resolution seeking the earliest possible introduction of expanded service to Hamilton. Based on recent discussions with GO Transit, the current timing of the extension of full GO Train Service to Burlington (Fairview Street) from Oakville is 1992.

Recommendations No. 4 and 5

On 88 03 09 (DPD 27/88), Council approved resolutions to the Ministry of Transportation and GO Transit requesting the early development of the proposed Waterdown Road GO Station. Also, a resolution pertaining to the acquisition of additional property at the existing Fairview Street GO Station was also approved.

The purpose of Recommendation No. 4 to this report is to clarify Halton's position concerning the "early development" of the future Waterdown Road GO Station. Currently, GO Transit is pursuing negotiations to purchase additional property at the Fairview Street GO Station. If successful and improvements are implemented, current deficiencies can be relieved, however, upon the expansion (increased) of service to Hamilton, it is staff's opinion that the Waterdown Road GO Station is required to accommodate commuters from Waterdown, Dundas and Ancaster. Therefore, GO Transit is requested to commence the development of the Waterdown Road GO Station to coincide with the shift of existing GO Train service to the CPR Line from the CNR Line, which will terminate at the CP/TH & B Station in Hamilton. This shift in service will precede the actual increase in service west of the Fairview Street Station. Recommendation No. 5 reconfirms Halton's response to the Ministry and GO Transit on the need to resolve existing problems at the Fairview Street GO Station.

Recommendation No. 6

The purpose of this recommendation is to obtain the results of the investigation of full GO Train Service by CN Rail to the future Waterdown Road GO Station, and to advise GO Transit that Halton will respond or make its position known regarding this matter at a later date, following the review of the results of this study in consultation with GO Transit and the City of Burlington.

Position of Hamilton-Wentworth Region

Staff held discussions with the staff of Hamilton-Wentworth (H.O. Schweinbenz, Commissioner of Transportation), regarding areas of mutual interest in terms of the extension of additional GO Train Service. Areas of common position include:

a) general support for the GO Transit Boards Recommendations;

b) introduction of the expanded service as soon as is possible; and

c) support for the Waterdown Station.

Schedule D to this report is Mr. Schweinbenz's staff report which has been approved by Hamilton-Wentworth Council

At this time, staff would like to acknowledge the diligence and efforts of the Ministry of Transportation, GO Transit and McCormick Rankin in this Study. In particular, the assistance of Mr. Brian Ogden of the Ministry of Transportation, Mr. Frank Groh and Francis Chung of GO Transit and Mr. John Suthern of McCormick Rankin Ltd. is appreciated.

Respectfully submitted,

Mohammed
Commissioner of Planning and Development

[illegible]

APPROVED BY C.A.O

#6

GO TRAIN SERVICE EXPANSION PROGRAM
BURLINGTON TO HAMILTON STUDY

SUMMARY REPORT ON
THIRD ROUND OF PUBLIC INVOLVEMENT
MAY-JUNE 1988

DPD 93/88
SCHEDULE A

McCORMICK RANKIN

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#6

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APPENDIX B	MINUTES OF MEETINGS
APPENDIX C	MEDIA REPORTS
APPENDIX D	ATTENDANCE REGISTERS AND COMMENT SHEETS
APPENDIX D1	TUESDAY MAY 31, 1988 - HAMILTON
APPENDIX D2	WEDNESDAY JUNE 1, 1988 - BURLINGTON
APPENDIX D3	THURSDAY JUNE 2, 1988 - HAMILTON

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#6

INTRODUCTION

This report summarizes the third round of review and public involvement in the GO Train Service Expansion Program - Burlington to Hamilton Study. The third round of review coincided with the completion of the third stage of the study.

Alternatives had been identified in Spring of 1987 and reviewed in June 1987. The second stage of the study saw the analysis of alternatives and review of preliminary technical recommendations in November, 1987. Refinement and detailed study throughout early 1988 led to formulation of the final technical recommendations and preliminary design of the route and stations, comprising the third study stage.

Meetings and correspondence occurred throughout the third stage of the study with Interest Groups, Technical Agencies, municipal staff and interested members of the Public. During the review period, the technical recommendations were brought to the GO Transit Board of Directors, the Minister of Transportation, appropriate local municipal Committees of Council, government agencies, municipal staff, and the Public at three Public Information Centres (two in Hamilton and one in Burlington).

The purpose of the third round of public involvement may be summarized as.

- to develop awareness and understanding of the project and study process;
- to allow a public review of the work carried out in the study;
- to obtain reactions and comments from all interested parties concerning the study analysis and final technical recommendations;
- to ensure that public concerns are addressed during the study; and
- to ensure that the public participation requirements of the Environmental Assessment Act are met.

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SCHEDULE OF MEETINGS

The Project Team met with a number of concerned groups during the third stage of the study, and these are summarized below, separate from those presentations and public sessions that occurred during the review period.

Niagara Region Public Works Committee	December 8, 1987
Conservation Authorities, Royal Botanical Gardens	January 18, 1988 and May 5, 1988
Macnab South Heritage District Committee	February 16, 1988
Hamilton Local Architectural Conservancy Advisory Committee - CP/TH&B Station Subcommittee	February 18, 1988
Hamilton Social Planning and Research Council	February 24, 1988
Hamilton Central Area Plan Implementation Committee	March 18, 1988 and March 30, 1988
Halton Ecological and Environmental Advisory Committee	May 11, 1988

In addition to meetings with municipal and rail company staff, a series of four meetings were held between January 15 and March 3, 1988 with municipal staff and Bus operators to prepare a feasibility plan for the redevelopment of the CP/TH&B Station as an intermodal terminus.

The meetings at which the study results and final technical recommendations were received are as follows:

GO Transit Board of Directors	April 8, 1988
Technical Advisory Committee	May 5, 1988
External Team	May 9, 1988
Hamilton-Wentworth Transportation Services Committee	May 10, 1988
Halton Planning and Public Works Committee	May 11, 1988
Hamilton Transport and Environment Committee (public meeting)	May 15, 1988
Burlington Public Works Committee (represented by Burlington Staff)	May 16, 1988

Minutes of these meeting are included in Appendix B.

Three Public Information Centres were advertised and held as follows:

Central Public Library, Hamilton	3:00 to 9:00p.m.	May 31, 1988
Fairfield Public School, Burlington	4:00 to 9:00p.m.	June 1, 1988
Convention Centre, Hamilton	3:00 to 9:00p.m.	June 2, 1988

The displays used for the Information Centres are included in Appendix A, while attendance registers and all comment sheets received during the Centres comprise Appendix E.

PUBLIC AWARENESS

Public awareness of the study has grown throughout the past year, as two rounds of Information Centres were held, frequent reports in the media (newspapers, television, radio) have been published, the matter has appeared before municipal Committees and meetings have been held with Interest Groups.

Aided by a higher media profile during the third round of review in April and May (copies of newspaper and radio items are attached in Appendix C), publicity efforts on the part of the Project Team focussed on public awareness of the three Information Centres held in the community. An extensive effort was made through correspondence and distribution of brochures (see attached copy) as follows:

- brochures were distributed by mailman's walk to all postal addresses in the study area on May 20-25. The postal walks covered the same areas as those used in the first and second rounds of public involvement 1987. In Burlington, over 4,000 brochures were distributed in the areas between Plains Road and Highway 403 west of the Q.E.W., and between Prospect Street and the Q.E.W. in the east. Almost 32,000 brochures were mailed to addresses in Central Hamilton, bounded by Longwood Road, Hamilton Mountain, Brant Avenue, King Street, Wellington Street and Hamilton Harbour.

- All householders immediately adjacent to the recommended rail corridor between Gage Park in Hamilton and the Burlington GO Station were hand delivered a letter and brochure inviting them to attend the information Centres. (These homes were also included in the general mail distribution of brochures).

- All those who registered at any previous information Centre or who wrote letters to the Project Team were mailed a brochure and invitation to the Information Centres.

- Ontario Government Notices advising of the study and the Information Centres were placed in the Hamilton Spectator, Burlington Spectator, and Burlington Post on May 18 and 28 and in the Toronto Star, the Sun, and the Globe and Mail on May 25.

- External agencies, interested technical agencies, Harbour Stakeholders, Interest Groups and Provincial and Federal Members of Parliament were sent a letter with, if appropriate, a number of brochures for distribution.

- City and Regional Clerks and Hamilton Public Library were sent copies of the brochure for internal and public distribution.

- Display panels with brochures were set up in the Hamilton GO Train and Bus Terminals a week prior to the Information Centres and brochures were handed out in person to each passenger boarding the eastbound GO trains on May 25.

- Brochures were left at the ticket counters of the Burlington, Oakville West, Oakville, Clarkson and Port Credit GO Train Stations for the public.

The Centres consisted of a set of displays which interested people could review, and comment sheets which attendees were encouraged to fill out. Project Team representatives were available at all times to answer questions, discuss the displays, talk on a one-to-one basis about the project and listen to the public's suggestions and comments. The displays used at the Information Centres are appended to this report, as are the comment sheets submitted by attendees

SUMMARY OF COMMENTS

The comments made by elected representatives at the Committee presentations during the third round of review are included in the Minutes of meetings appended to this report. They may be summarized by noting a general support for the final technical recommendations along with a desire for speedy action and the addressing of specific concerns.

The Public Information Centres achieved their objectives as described in the Introduction, however attendance was limited to less than 300 over the three days (compared to 200 in round one and 400 in the second round). Most attendees spent up to an hour reviewing the material and discussing the study with the Project Team. The debate in the public's mind has apparently focussed around the fundamental choice of routes in Hamilton - CN vs CP. Arguments for one or the other, as reflected in the comment sheets and in discussion at the Information Centres, generally cite a common list of factors but different conclusions are drawn. Of the 91 comment sheets received, 52 stated a preference for the CP/TH&B route as opposed to 9 favouring CN.

Few people questioned the desirability of the service, and many expressed a strong desire to, whatever the recommendations, expand train service to Hamilton as soon as possible. There was general acceptance of the recommendation to increase service to meet demand, as the constraints and

demands were detailed at the Centres. Although some concern about the limit on train service placed by the Hunter Street Tunnel was expressed, the "full service right now" position was not taken by very many attendees. This reflects the demand information and service recommendations provided, as well as the fact that the Tunnel is not a barrier to full train service when demand warrants.

Many of the concerns raised at previous information Centres were addressed by the detailed work carried out in the third stage of the study, but some remain. Although these were studied and discussed at the Centres, it appears that the grade separation of King Road in Burlington with the CN corridor, the noise impact of increased rail activity in the Aldershot Yard/Enfield Road area, the potential for spurring economic development in James Street North in Hamilton, the long-term expansion of the GO system to Niagara and the availability of parking at the CP/TH&B Station are all issues that directly affected residents and business persons continue to voice concerns with. In particular, James Street North businesses and Enfield Road residents made an effort to put their concerns forward at the Centres. Most Enfield Road attendees desired the provision of a noise barrier as part of the project. Very little was heard from those who live elsewhere adjacent to the route and few current GO commuters made comments, in spite of the extensive efforts made to ensure their awareness of the Centres.

The recommendations for provision of the Waterdown Road Station was supported almost unanimously, with suggestions for full service to Waterdown Road, early implementation, and sufficient parking for all demand being common. Most Burlington attendees did not state a preference for a route in Hamilton.

Very little comment on natural environmental effects was made, and capital cost was mentioned rarely, and usually only in the context of comparing the CN with the CP route. As well, few attended on behalf of identified interest groups.

The recommendations and feasibility plan shown for the intermodal transportation terminal at the CP/TH&B Station were subject of great interest and discussion, and were received favourably by a strong majority of the attendees. The possible parking deck was a crucial factor in generating support for the plan, as skepticism continued to be expressed in some quarters about the likelihood of commuters driving to the Waterdown Road Station for parking, and the high parking demand currently in the CP/TH&B Station area was recognized.

Following is a detailed breakdown of the comment sheets received during the three Information Centres. The relatively high response rate of 45% reflects the deep interest of most of those who made the effort to attend the Centres.

SUMMARY OF COMMENT SHEETS FROM THIRD ROUND OF PUBLIC INFORMATION CENTRES

HAMILTON (May 31, June 2, 1988)

Registered attendees	159	
Total attendees	200±	
Comment sheets received	71	
agree with recommendations (prefer CP/TH&B route)	50	70%
prefer CN route	8	11%
no preference stated	13	18%
Comments:		
proposed level of service inadequate	1	
making at CP/TH&B a concern	8	
existing GO commuters preferring CN	1	
existing GO commuters preferring CP	5	
economic benefits to CP/TH&B area (cited by CP preferers)	3	
economic benefits to CN area (cited by CN preferers)	5	
HSR access important factor at CP/TH&B	17	
extension to the east a concern	6	
Waterdown station noted	5	
Implement as soon as possible	11	

BURLINGTON (June 1, 1988)

Registered attendees	49
Total Attendees	75±
Comment sheets received	20
Comments:	
noise at Aldershot yard a problem	5
King Road grade separation desired	1

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DPD 93/88
SCHEDULE B

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

FINAL TECHNICAL RECOMMENDATIONS

- THE IMPLEMENTATION OF THE RECOMMENDATIONS WILL REQUIRE APPROVAL UNDER THE ENVIRONMENTAL ASSESSMENT ACT. CONSTRUCTION WILL TAKE PLACE IN THE CONTEXT OF OVERALL TRANSPORTATION REQUIREMENTS AND THE AVAILABILITY OF FUNDING AT THAT TIME.

1. ROUTE

   - SHIFT THE EXISTING GO TRAIN SERVICE IN HAMILTON FROM THE CN RAIL OAKVILLE SUBDIVISION TO THE CP RAIL TORONTO CONNECTION AND WATERFORD SUBDIVISION, TERMINATING AT THE CP/TH&B HUNTER STREET STATION.

2. LEVEL OF SERVICE

   - PROVIDE INCREMENTAL IMPROVEMENTS IN TRAIN SERVICE AS APPROPRIATE AND AS REQUIRED BY DEMAND UP TO THE LEVEL OF SERVICE THAT CAN BE ACCOMMODATED BY THE EXISTING HUNTER STREET TUNNEL. (THE EXISTING TUNNEL CAN ACCOMMODATE SIGNIFICANT SERVICE UPGRADING WITHOUT THE NEED FOR RECONSTRUCTION).
   - INTEGRATE GO BUS AND GO TRAIN SCHEDULES TO PROVIDE FULL GO SERVICE THROUGHOUT THE DAY IN THE HAMILTON-TORONTO CORRIDOR.

3. STATIONS

   CP/TH&B STATION

   - TRANSFER THE FUNCTIONS OF THE EXISTING HAMILTON BUS TERMINAL TO THE CP/TH&B HUNTER STREET STATION, WHICH WOULD OPERATE AS AN INTERMODAL TRANSIT TERMINAL.

   WATERDOWN ROAD STATION

   - PROVIDE GO STATION FACILITIES IN THE BLOCK BOUNDED BY WATERDOWN ROAD, HIGHWAY 403, CN RAIL ALDERSHOT YARD PROPERTY AND CN RAIL OAKVILLE SUBDIVISION.

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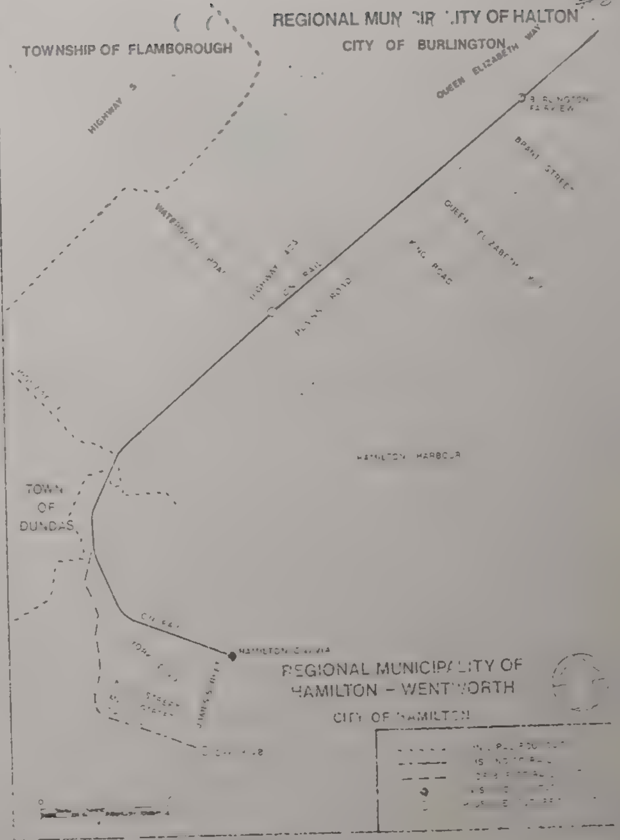

GO TRAIN SERVICE EXPANSION PROGRAM
BURLINGTON TO HAMILTON STUDY.

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#6

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON STUDY

CP/CN SIMULATIONS

CP (SIMULATION OF LEVELS OF SERVICE ATTAINABLE WITHOUT CHANGE TO THE EXISTING HUNTER STREET TUNNEL)

- 6 - 7 REVENUE TRAINS CAN BE ACCOMMODATED DURING EACH PEAK PERIOD

  (E.G. 3 PEAK DIRECTION PLUS 3 CONTRAFLOW; 6 PEAK DIRECTION PLUS 1 CONTRAFLOW; ETC.)

- OFF PEAK TWO WAY SERVICE CAN BE ACCOMMODATED WITHIN RANDOM TIME SLOTS, DEPENDING ON DELAYS TO CP SCHEDULE (APPROXIMATELY 2 - 4 HOUR SERVICE)

- TOTAL DAILY GO TRAIN SERVICE CAN BE INCREASED TO 15 - 20 FROM THE CURRENT 6 TRAIN LEVEL

  ADDITIONAL TRACK MAY BE REQUIRED ON THE APPROACHES TO THE TUNNEL AT SOME POINT BETWEEN THE 6 AND 20 TRAIN LEVELS

CN (NO SIMULATIONS CARRIED OUT)

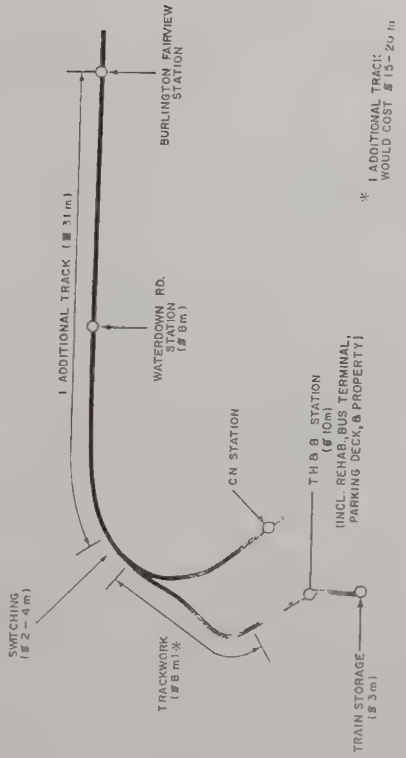
- ANY INCREASE IN THE NUMBER OF GO TRAINS ABOVE CURRENT LEVELS WILL PROBABLY REQUIRE THE PROVISION OF ONE ADDITIONAL TRACK ON THE CN SECTION OF THE LINE

- IN THE ABSENCE OF DETAILED SIMULATIONS, THE STUDY TEAM'S BEST ESTIMATE IS THAT THE LEVEL OF SERVICE THAT CAN BE ACCOMMODATED WITHIN THE EXISTING HUNTER STREET TUNNEL CAN PROBABLY ALSO BE ACCOMMODATED WITH ONE ADDITIONAL TRACK ON THE CN SECTION OF THE LINE

GO TRAIN SERVICE EXPANSION PROGRAM

BURLINGTON TO HAMILTON

COST ESTIMATE


BURLINGTON FAIRVIEW STATION
1 ADDITIONAL TRACK ($ 31 m)
WATERDOWN RD. STATION ($ 8 m)
CN STATION
TH & B STATION ($ 10m) (INCL. REHAB., BUS TERMINAL, PARKING DECK, & PROPERTY)
SWITCHING ($ 2 - 4 m)
TRACKWORK ($ 8 m) *
TRAIN STORAGE ($ 3 m)
* 1 ADDITIONAL TRACK WOULD COST $ 15 - 20 m

DPD 93/88
SCHEDULE C

#6

GO TRANSIT

555 Wilson Avenue, Downsview, Ontario, Canada M3H 5Y6
(416) 630-5220 Telex 06-217508 Fax (416) 630-2083

JUN 2 0 1988

15 June 1988

Mr. R. Mohammed
Commissioner of Planning and Development
The Regional Municipality of Halton
1151 Bronte Road
P.O. Box 7000
Oakville, Ontario
L6J 6E1

Dear Mr. Mohammed:

SUBJECT: GO TRAIN SERVICE EXPANSION TO WATERDOWN

The GO Board, in a meeting held on 8 April 1988, requested M.T.O. to initiate a feasibility study of full GO Train Service Expansion to Waterdown through CN Rail.

A request was sent to CN Rail on 22 April 1988 to identify additional plant requirements and costs associated with the service expansion to the proposed Waterdown GO Station.

The terms of reference are being discussed and would not be finalized until mid-July 1988. Preliminary indication is that CN Rail would be available to study the issue between September and December 1988.

Implementation would depend on the outcome of the study, the GO Board direction, the environmental process and the funding provision.

I trust this meets your requirement.

Yours very truly,

R.C. Ducharme
Director
Engineering & Development

cc: B. Ogden, M.T.O.
J. Sutherns, McCormick Rankin
F. Chung
D. McCleary, Halton Region

The Hamilton Street Railway Company • 18 Wentworth Street North • Hamilton, Ontario • L8L 5V1 • 527 4441

#6

June 28, 1988

DPD 93/88
SCHEDULE D

REPORT TRA 88-066

To The Chairman and Members of the
Transportation Services Committee

Re: GO-Train Service Expansion into Hamilton

Origin:

At your meeting of May 10th, 1988, we presented a progress report on the final phases of this study. Specifically we advised that the third round of public meetings was about to start and a final recommendation was to be formulated.

Analysis:

Attached is the summary report from the consultant on the third round of public involvement. On page 5 the comments can be summarized as follows:

- Elected members of Council (Burlington, Halton, Hamilton), with the exception of the City of Stoney Creek, generally supported the final technical recommendations along with a desire for speedy action.
- The public at large overwhelmingly supported the selection of the TH&B station as the downtown terminus and generally accepted the recommendation to increase service to meet demand.

City of Hamilton:

Since the City of Hamilton is the principle City affected by this service, we felt it prudent to await the City's resolution on this matter. Their resolution, as approved by City Council on Tuesday, June 28, 1988 is attached. You will note that they also approve of the TH&B station.

continued...

#6

In view of the above and since a significant amount of material has already been presented to your Committee, I will go directly to our recommendations. The Consultant will be available at the Committee meeting.

Recommendations:

1. That the GO-Train services into Hamilton be realigned onto the TH&B/CP rail line with a downtown station at the former TH&B passenger terminal.
2. That the realignment be done as soon as practical and that service enhancements be optimized taking into account ridership demand and incremental costs.
3. That the new station be developed in its ultimate multi-modal configuration from the start, including the relocation of all transit functions now taking place at the Rebecca Street GO Bus Station.
4. That concurrent with this service and alignment commitment and development, the Province also commit to the development of a new suburban station at Waterdown Road in Burlington.
5. That the Province be requested to expedite approvals necessary for this undertaking and commit funds for the expeditious construction of the works necessary to implement this undertaking.
6. That the Regional Municipality of Hamilton-Wentworth fully supports the Ministry of Transportation for Ontario and GO-Transit in seeking approvals for this undertaking.

Respectfully submitted,

H. O. Schweinbenz
Commissioner of Transportation

HOS/db

Appendix O

Bibliography

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